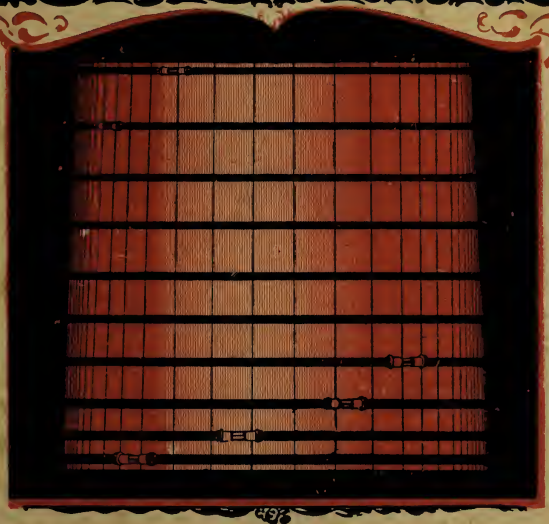
1900

W. E. CALDWELL CO.

INCORPORATED



MANUFACTURERS OF ALL KINDS OF

TANKS · TOWERS & TUBS.

LARGE WATER TANKS A SPECIALTY

LOUISVILLE, KY.

THE WERNER COMPANY, AKRON, O.

INTRODUCTION

WE have long been advocating the superiority of Cypress wood for tanks, as practical experiments and tests have proved conclusively that it is the ideal wood for this purpose; but if there has been any reason before to question this fact it has certainly been removed in the past two or three years by the action of manufacturers of tanks of other woods, who, one and all, now advertise their ability to supply Cypress. Could any more convincing argument be offered a prospective customer who is undecided as to which is the best wood to use?

There are many reasons why Cypress should be given the preference where a good tank is wanted. The first and most important is its greater durability, which most authorities estimate to be from fifty to seventy-five per cent. more than that of Pine or Cedar, though some place it as high as one hundred and even one hundred and fifty per cent. Then, the wood is one that will shrink and swell very little so that the sun's rays are not likely to open up the joints of the tank when it is allowed to stand empty or partly empty for a time. And this wood is practically free of knots, and grows very straight, so that it will scarcely warp or twist at all, while some woods, for instance, White Cedar, will bend or bow to such an extent that half of the staves of a tank that are straight and true when they leave the factory will be from one-half to two inches out of line when they are put together into the finished tank, and can not be sprung or jarred into place, and the result is the tank can never be made tight. Moreover, Cypress is not affected by the action of hot water or chemicals, and gives off no odor or color. It is for these reasons it finds such favor for every service to which a wooden tank can be put.

The merits of this wood have become so well known that the only argument offered against its use has been its greater cost compared with White Pine and Cedar; but we have about done away with this objection, as we now have our own timber land and operate our own saw mills, and thus handle the lumber from the stump to the finished tank. Moreover, we have recently moved into new quarters where our capacity has been doubled and our facilities in the way of improved machinery and more economical methods of manufacturing have been greatly increased; so that we can supply a Cypress tank for almost as little as one of inferior woods will cost.

A question of even more importance than the kind and quality of lumber your tank is to be made of is the number and size of hoops to be used, as, of course, the safety of the tank will depend altogether upon the strength of the hoops; moreover, if the hoops are too light or too few in number the tank can not be made water tight, as they will not be able to hold the joints together against the strain or outward pressure from the weight of water in the tank. With all tanks furnished by us the hoops are supplied of the number and weight that exact calculation shows is necessary to withstand this strain and to have the proper factor of safety that the best engineering practice demands.

For these reasons, it will be to your interest to secure our prices when in want of tanks for whatever purpose intended, as we can supply anything you may require in that line, and our reputation is such as to assure you of securing satisfactory goods. It will afford us pleasure, though, to furnish prospective customers the names of parties in their own vicinity who are using our tanks to enable them to thoroughly investigate this question.

Attention is called to the illustrations and descriptions of the Steel Tower we build for the support of Water Tanks. This is a graceful, handsome and ornamental structure, and of such simple design that anybody can easily erect it from the plans we supply for that purpose. It is constructed of round steel columns and built in short sections which are coupled together by socket connections as shown in cuts. The Tower is the most substantial and durable structure of this kind on the market, and wherever an elevated reservoir is wanted for fire protection or water supply for private grounds, manufacturing plants or small towns and villages, nothing else is so thoroughly adapted to the requirements as one of these structures with a Cypress Tank thereon.

Where a cheaper tower is wanted we can supply a special Wood and Iron tower or an All Wood Tower, both of which are illustrated and priced in catalogue.

We are building a line of Galvanized Steel Tanks as illustrated in catalogue, that can be recommended as thoroughly reliable, and they are very cheap.

We also build Steel Tanks of all kinds.

We shall be pleased at all times to answer any inquiries concerning our goods, and to furnish estimates and plans and specifications of jobs, as desired.

W. E. CALDWELL CO.

(INCORPORATED)

OFFICE AND WORKS: Brook and D Streets. **LOUISVILLE, KY., U.S.A.**

CYPRESS LUMBER

FROM THE SCIENTIFIC AMERICAN

Of December 1891:

"Cypress timber, owing to its beautiful finish and durability and lightness, has long been in favor in the Gulf Coast States, and is fast growing in favor in the more Northern States, especially among those who have tested and know its many good qualities.

"Cypress is especially adapted to BUILDING TANKS, TUBS, and VATS, and when used for such purposes IT NEVER WILL DECAY.

"It also makes better Sash, Doors, Blinds and Frames than White Pine, and many Railroads use it for Water Tanks. It stands the weather better than White Pine; does not WARP or TWIST, and does not SHRINK or SWELL.

"NO LUMBER in the WORLD equals it for Tanks, Vats, Siding or Weather Boards, Exposed Floors or Shingles. Siding can be used and not painted, and will last fifty years.

"The DURABILITY of CYPRESS is illustrated by the examples of ROOFS, in Mobile and New Orleans in good order laid SIXTY YEARS ago."

FROM THE TRADESMAN

Of January, 1899:

"The VALUE of VARIOUS WOODS for TANKS has been discussed to its capacity by people of experience, both past and present, and so thorough have these discussions been that the information gained has proved of advantage, not only to the manufacturer, but the buyer as well. The woods more commonly used are pine, poplar, redwood, cedar and CYPRESS. COMPARISONS AND TESTS ARE STRONGLY IN FAVOR OF LOUISIANA GULF CYPRESS."

SEVEN REASONS

Why Cypress Lumber is the Best Wood for Tanks:

FIRST. It will last for ages without decay.

SECOND. It is the only wood impervious to acids.

THIRD. It is not injuriously affected by the action of hot water.

FOURTH. It shrinks and swells less than other woods.

FIFTH. It warps and twists less than other woods.

SIXTH. It has not the knots and defects found in White Pine, Cedar and other woods.

SEVENTH. When seasoned, it is lighter than all other woods, assuring cheaper transportation.

ROUND TANKS FOR ALL PURPOSES

Gallons.	Inside Diameter.	Inside Depth.	No. of Hoops.	Shipping Weight.	Price Complete, Riveted Hoops.	Price of Lugs, Extra.	Gallons.	Inside Diameter.	Inside Depth.	No. of Hoops.	Shipping Weight.	Price Complete, Riveted Hoops.	Price of Lugs, Extra.
	ft. in.	ft. in.		lbs.				ft. in.	ft. in.		lbs.		
158	3.0	3.0	3	220	$10 00	$2 40	1127	8.0	3.0	3	754	$24 20	$2 65
180	3.0	3.5	4	256	11 00	2 69	1294	8.0	3.5	4	840	27 00	3 45
216	3.6	3.0	4	277	12 00	2 69	1500	8.0	4.0	5	931	30 05	4 50
240	3.6	3.5	4	303	13 00	2 69	1656	8.0	4.5	5	989	31 85	4 50
321	4.0	3.5	4	361	15 20	2 69	2031	8.0	5.5	5	1096	35 50	4 50
406	4.6	3.5	4	402	16 55	2 69	2406	8.0	6.5	6	1248	40 15	5 30
587	5.0	4.0	4	505	18 50	2 86	2781	8.0	7.5	6	1372	44 05	5 55
648	5.0	4.5	4	543	20 55	2 86	637	8.6	1.5	2	615	19 65	1 85
712	5.6	4.0	4	566	21 90	3 20	849	8.6	2.0	2	675	21 50	1 85
788	5.6	4.5	5	624	23 00	4 00	1061	8.6	2.5	3	765	24 50	2 65
964	5.6	5.5	5	706	26 00	4 00	1273	8.6	3.0	3	825	26 40	2 65
317	6.0	1.5	2	363	15 00	1 60	1450	8.6	3.5	4	915	28 25	3 45
422	6.0	2 0	2	411	16 00	1 80	1697	8.6	4.0	4	982	31 50	3 70
527	6.0	2.5	3	476	18 00	2 65	1875	8.6	4.5	4	1038	32 05	3 70
632	6.0	3.0	3	520	20 50	2 65	2299	8.6	5.5	5	1190	38 20	4 50
720	6.0	3.5	4	586	22 50	3 45	2723	8.6	6.5	5	1314	42 10	4 75
845	6.0	4.0	5	645	24 00	4 00	3148	8.6	7.5	6	1462	46 90	5 55
934	6.0	4.5	5	694	25 50	4 00	3572	8.6	8.5	7	1616	51 90	6 35
1145	6.0	5.5	5	776	28 00	4 25	714	9.0	1.5	2	656	20 95	1 85
372	6.6	1.5	2	419	16 25	1 60	951	9.0	2.0	3	740	23 70	2 40
495	6.6	2.0	3	487	18 00	2 40	1188	9.0	2.5	3	804	25 70	2 40
618	6.6	2.5	3	535	19 75	2 40	1425	9.0	3.0	4	907	29 25	3 45
741	6 6	3.0	3	583	21 25	2 40	1623	9.0	3.5	4	971	31 20	3 45
848	6.6	3.5	4	656	23 00	3 20	1900	9.0	4.0	4	1035	33 20	3 45
993	6.6	4.0	5	729	25 50	4 00	2098	9.0	4.5	4	1104	35 35	3 70
1096	6.6	4 5	5	778	27 60	4 25	2577	9.0	5.5	5	1260	40 40	4 50
1344	6.6	5.5	5	906	29 00	4 25	3053	9.0	6.5	5	1394	44 65	4 75
1592	6.6	6.5	6	1010	33 15	5 05	3529	9.0	7.5	6	1553	49 80	5 55
431	7.0	1.5	2	446	17 00	1 60	4004	9.0	8.5	7	1711	54 95	6 35
575	7.0	2.0	2	496	18 25	1 60	795	9.6	1 5	2	726	23 15	1 85
719	7.0	2.5	3	570	19 75	2 40	1060	9.6	2.0	3	821	26 30	2 40
863	7.0	3.0	3	620	21 50	2 40	1320	9.6	2.5	3	889	28 40	2 40
983	7.0	3.5	4	694	23 50	3 20	1590	9.6	3.0	3	964	30 80	2 65
1151	7.0	4.0	4	751	25 25	3 45	1811	9.6	3.5	4	1066	34 20	3 45
1271	7.0	4.5	4	801	27 50	3 45	2120	9.6	4.0	4	1134	36 30	3 45
1559	7.0	5.5	5	921	30 00	4 25	2348	9.6	4.5	4	1223	39 15	3 70
1847	7.0	6.5	5	1031	34 50	4 50	2871	9.6	5.5	5	1385	44 45	4 75
495	7.6	1.5	2	509	18 00	1 60	3402	9.6	6.5	6	1554	49 95	5 55
660	7.6	2.0	3	589	19 75	2 40	3933	9.6	7.5	6	1690	54 20	5 75
825	7.6	2 5	3	643	21 00	2 40	4462	9.6	8.5	7	1859	59 70	6 35
990	7.6	3.0	3	697	22 50	2 40	4992	9.6	9.5	7	2002	64 25	6 60
1128	7.6	3.5	4	778	25 00	3 20	881	10.0	1.5	2	765	24 40	1 85
1322	7.6	4.0	4	833	30 15	3 45	1175	10.0	2.0	2	837	26 65	1 85
1460	7.6	4.5	4	893	31 50	3 45	1468	10.0	2.5	3	945	30 25	2 65
1790	7.6	5.5	5	1032	35 55	4 50	1762	10.0	3.0	3	1017	32 25	2 65
2120	7.6	6.5	5	1140	37 60	4 50	2006	10.0	3.5	4	1124	36 05	3 45
563	8.0	1.5	2	552	17 65	1 85	2348	10.0	4.0	4	1202	38 50	3 70
751	8.0	2.0	2	610	19 45	1 85	2592	10.0	4.5	4	1274	40 75	3 70
939	8.0	2.5	3	689	22 05	2 40							

The above capacities are based on tanks having straight staves, but, unless otherwise ordered we usually make them with a slight taper.

We guarantee the capacities as above to be correct.

We guarantee the weights given to be correct.

All tanks in which the depth ends in even feet are only made to order.

The above prices are based upon tanks made of 2 inch material. To find the list prices of tanks made of 2½ inch material, add 20 per cent. to above list; and add 40 per cent. to the list above to find the list prices of tanks made of 3 inch material. Also add 35 per cent. and 70 per cent. respectively to weights given of 2 inch tanks to ascertain the weights of 2½ and 3 inch.

NOTE.—Although our lists are based on 2" we recommend 1¼" Red Cypress as being ample in thickness for tanks 8x8 and under, in the manner we hoop them. This makes a very cheap tank and a good one.

ROUND TANKS FOR ALL PURPOSES

Gallons.	Inside Diameter.	Inside Depth.	No. of Hoops.	Shipping Weight.	Price Complete, Riveted Hoops.	Price of Lugs, Extra.	Gallons.	Inside Diameter.	Inside Depth.	No. of Hoops.	Shipping Weight.	Price Complete, Riveted Hoops.	Price of Lugs, Extra.
	ft. in.	ft. in.		lbs.				ft. in.	ft. in.		lbs.		
3182	10.0	5.5	5	1454	$46 60	$4 50	2115	12.0	2.5	3	1226	$39 15	$ 2 65
3770	10.0	6.5	5	1608	51 50	4 75	2538	12.0	3.0	3	1318	42 05	2 90
4357	10.0	7.5	6	1784	57 20	5 55	2891	12.0	3.5	3	1414	45 10	3 15
4945	10.0	8.5	7	1971	63 30	6 60	3384	12.0	4.0	4	1534	49 10	3 70
5532	10.0	9.5	8	2158	69 35	7 40	3737	12.0	4.5	4	1620	51 75	3 70
972	10.6	1.5	2	881	28 05	1 85	4582	12.0	5.5	5	1843	59 05	4 75
1295	10.6	2.0	2	962	30 60	2 10	5428	12.0	6.5	6	2065	66 80	5 80
1609	10.6	2.5	2	1036	32 90	2 10	6274	12.0	7.5	7	2280	73 30	6 60
1943	10.6	3.0	3	1140	36 35	2 65	7110	12.0	8.5	8	2494	80 25	7 60
2213	10.6	3.5	4	1251	40 05	3 45	7956	12.0	9.5	8	2682	86 20	7 85
2590	10.6	4.0	4	1325	42 40	3 45	8802	12.0	10.6	9	2898	98 55	8 65
2860	10.6	4.5	5	1443	46 35	4 50	9658	12.0	11.5	9	3091	99 18	9 10
3508	10.6	5.5	5	1591	50 95	4 50	1377	12.6	1.5	2	1150	36 60	2 10
4155	10.6	6.5	6	1783	57 25	5 55	1836	12.6	2.0	3	1289	41 15	2 65
4803	10.6	7.5	7	1968	63 25	6 35	2295	12.6	2.5	3	1369	43 65	2 65
5452	10.6	8.5	7	2123	68 15	6 60	2754	12.6	3.0	3	1466	46 75	2 90
6100	10.6	9.5	8	2314	74 35	7 65	3136	12.6	3.5	3	1563	49 85	3 15
1066	11.0	1.5	2	933	29 75	2 10	3672	12.6	4.0	4	1696	54 25	3 70
1421	11.0	2.0	2	1011	32 15	2 10	4053	12.6	4.5	4	1784	57 00	3 70
1777	11.0	2.5	3	1120	35 75	2 65	4971	12.6	5.5	5	2003	64 15	4 75
2132	11.0	3.0	3	1198	38 20	2 65	5890	12.6	6.5	7	2276	73 25	6 60
2428	11.0	3.5	4	1307	41 80	3 20	6808	12.6	7.5	7	2452	78 75	6 60
2843	11.0	4.0	4	1392	44 50	3 45	7726	12.6	8.5	8	2672	85 90	7 40
3139	11.0	4.5	4	1470	46 95	3 45	8644	12.6	9.5	8	2865	92 05	7 85
3850	11.0	5.5	5	1679	53 80	4 75	9638	12.6	10.6	9	3084	104 70	8 65
4561	11.0	6.5	6	1877	60 25	5 55	10481	12.6	11.5	9	3279	105 40	9 10
5272	11.0	7.5	7	2079	66 85	6 60	5378	13.0	5.5	6	2138	68 70	5 80
5982	11.0	8.5	8	2274	73 20	7 40	6370	13.0	6.5	6	2322	74 50	5 80
6694	11.0	9.5	8	2438	78 37	7 65	7363	13.0	7.5	7	2556	82 10	6 60
7405	11.0	10.6	8	2632	89 60	8 45	8356	13.0	8.5	7	2744	88 50	6 80
1165	11.6	1.5	2	976	31 10	2 10	9349	13.0	9.5	9	3045	98 15	9 10
1553	11.6	2.0	2	1058	33 65	2 10	10420	13.0	10.6	9	3250	110 50	9 55
1942	11.6	2.5	3	1164	37 15	2 40	11333	13.0	11.5	10	3481	112 20	10 55
2331	11.6	3.0	3	1246	39 70	2 40	12410	13.0	12.6	10	3684	124 45	11 00
2654	11.6	3.5	3	1335	42 50	2 65	5800	13.6	5.5	6	2187	70 25	5 55
3107	11.6	4.0	4	1457	46 55	3 45	6870	13.6	6.5	6	2388	76 60	5 80
3430	11.6	4.5	4	1548	49 50	3 70	7940	13.6	7.5	7	2984	84 20	6 60
4207	11.6	5.5	5	1760	56 40	4 75	9010	13.6	8.5	7	2816	90 30	6 80
4985	11.6	6.5	6	1976	63 40	5 55	10080	13.6	9.5	9	3129	100 85	9 10
5762	11.6	7.5	7	2176	69 95	6 60	11150	13.6	10.6	10	3378	115 05	10 35
6539	11.6	8.5	8	2380	76 57	7 40	12220	13.6	11.5	10	3580	115 45	10 55
7316	11.6	9.5	8	2552	82 00	7 65	13290	13.6	12.6	10	3778	127 75	11 00
8093	11.6	10.6	9	2756	93 75	8 45	6237	14.0	5.5	5	2262	72 50	5 20
1269	12.0	1.5	2	1020	32 50	2 10	7388	14.0	6.5	6	2518	80 85	6 20
1692	12.0	2.0	3	1140	36 45	2 65	8540	14.0	7.5	7	2765	88 90	7 00
							9691	14.0	8.5	8	2819	97 15	8 05

The above capacities are based on tanks having straight staves, but, unless otherwise ordered, we usually make them with a slight taper.

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Gallons.	Inside Diameter.	Inside Depth.	No. of Hoops.	Shipping Weight.	Price Complete, Riveted Hoops.	Price of Lugs, Extra.	Gallons.	Inside Diameter.	Inside Depth.	No. of Hoops.	Shipping Weight.	Price Complete, Riveted Hoops.	Price of Lugs, Extra.
	ft. in.	ft. in.		lbs.				ft. in.	ft. in.		lbs.		
10843	14.0	9.5	9	3265	$105 15	$ 8 85	10264	16.6	6.5	7	3283	$105 55	$ 7 25
11995	14.0	10.6	9	3592	122 45	9 55	11864	16.6	7.5	8	3611	116 40	8 95
13146	14.0	11.5	10	3796	122 60	11 00	13464	16.6	8.5	8	3854	124 05	9 15
14298	14.0	12.6	10	4080	138 25	12 35	15064	16.6	9.5	8	4178	134 75	9 60
15449	14.0	13.5	10	4280	138 25	12 35	16660	16.6	10.6	9	4510	153 05	11 35
6691	14.6	5.5	5	2452	78 50	5 20	18264	16.6	11.5	9	4799	155 15	12 00
7925	14.6	6.5	6	2716	87 10	6 20	19864	16.6	12.6	11	5150	174 20	13 60
9160	14.6	7.5	7	2970	95 37	7 00	21464	16.6	13.5	11	5385	174 20	13 60
10395	14.6	8.5	8	3234	104 00	8 05	23064	16.6	14.6	11	5626	189 15	13 85
11631	14.6	9.5	9	3488	112 25	8 85	24664	16.6	15.5	13	5985	193 85	15 90
12866	14.6	10.6	9	3820	129 90	9 55	9197	17.0	5.5	5	2956	94 70	4 95
14102	14.6	11.5	10	4035	130 25	11 00	10894	17.0	6.5	7	3382	109 20	7 25
15326	14.6	12.6	10	4326	145 55	11 90	12592	17.0	7.5	7	3627	116 85	8 15
16573	14.6	13 5	10	4532	146 30	12 35	14290	17.0	8.5	8	3933	126 86	9 15
7160	15.0	5.5	5	2530	80 90	4 95	15988	17.0	9 5	9	4273	138 20	10 40
8412	15.0	6.5	6	2820	90 45	6 20	17827	17.0	10.6	9	4556	154 85	11 35
9804	15.0	7.5	7	3093	100 65	7 25	19384	17.0	11.5	9	4865	157 40	12 00
11126	15.0	8.5	8	3386	109 05	8 95	21233	17.0	12.6	9	5216	176 60	12 00
12448	15.0	9.5	8	3696	119 36	8 95	22639	17.0	13.4	11	5457	176 60	13 60
13778	15.0	10.6	9	3917	133 00	9 35	24619	17.0	14.6	12	5788	195 05	15 10
15090	15.0	11.5	9	4130	133 65	9 95	26035	17.0	15.4	13	6085	197 20	15 90
16413	15.0	12.6	10	4394	148 20	11 00	27733	17.0	16.6	14	6632	223 75	16 70
17735	15.0	13.5	11	4730	152 80	12 70	29431	17.0	17.4	15	6942	226 35	17 50
19057	15.0	14 6	12	4943	166 50	13 75	9746	17.6	5.5	5	3113	99 70	4 95
7645	15.6	5.5	5	2599	83 16	4 95	11545	17.6	6.5	7	3554	114 70	7 25
9057	15.6	6.5	6	2884	92 50	6 20	13344	17.6	7.5	7	3798	122 35	8 15
10468	15.6	7.5	7	3165	101 70	7 25	15143	17.6	8.5	7	4114	133 90	9 15
11880	15.6	8.5	7	3476	112 00	8 95	16943	17.6	9.5	8	4416	142 45	9 60
13390	15.6	9.5	8	3789	123 60	8 95	18892	17.6	10.6	9	4764	161 55	11 35
14702	15.6	10 6	8	3942	133 65	8 95	20541	17.6	11.5	9	5082	164 15	12 00
16114	15.6	11.5	9	4226	136 05	9 95	22490	17.6	12.6	9	5328	179 65	12 00
17526	15.6	12.6	10	4502	152 15	11 30	23990	17.6	13.4	11	5690	184 15	13 60
18937	15.6	13.5	11	4840	156 50	12 70	26088	17.6	14.6	12	5926	203 00	15 10
20349	15.6	14.6	12	5116	172 30	13 75	27588	17.6	15.4	13	6334	205 25	15 90
8147	16.0	5.5	5	2686	85 90	4 95	29387	17.6	16.6	14	6970	232 65	16 70
9651	16.0	6.5	7	3048	98 10	7 25	31186	17.6	17.4	15	7222	235 35	17 50
11155	16.0	7 5	8	3370	108 75	8 95	10312	18.0	5.5	6	3372	108 75	8 15
12659	16.0	8.5	8	3604	116 50	9 15	12215	18.0	6.5	7	3689	119 05	8 95
14163	16.0	9.5	8	3922	127 90	9 60	14118	18.0	7.5	8	4091	132 50	9 85
15667	16.0	10.6	9	4240	144 35	11 35	16021	18.0	8.5	9	4433	143 75	11 10
17171	16.0	11.5	9	4529	147 60	12 00	17924	18.0	9.5	9	4689	151 75	11 10
18675	16.0	12 6	11	4853	164 55	13 60	19827	18.0	10.6	9	5040	171 30	12 00
20179	16 0	13.5	11	5080	164 55	13 60	21730	18.0	11.5	10	5370	174 05	13 05
21683	16.0	14.6	11	5330	179 60	14 00	23475	18.0	12.6	11	5786	196 05	17 00
23187	16.0	15.5	13	5678	184 15	15 90	25378	18.0	13.4	11	6041	196 05	17 00
8664	16.6	5.5	5	2905	92 80	4 95	27281	18.0	14.6	11	6298	212 05	17 00

The above capacities are based on tanks having straight staves, but unless otherwise ordered, we usually make them with a slight taper.

We guarantee the capacities as above to be correct.

We guarantee weights given to be correct.

All tanks in which the depth ends in even half feet are only made to order.

The above prices are based upon tanks made of 2-inch material. To find the list prices of tanks made of 2½-inch material, add 20 per cent. to above lists; and add 40 per cent. to the lists above to find the list prices of tanks made of 3-inch material. Also add 35 per cent. and 70 per cent. respectively, to weights given of 2-inch tanks, to ascertain the weights of 2½ and 3-inch.

NOTE.—Although our lists are based on 2", we recommend 1½" Red Cypress as being ample in thickness for tanks 8x8 and under, in the manner we hoop them. This makes a very cheap tank and a good one.

ROUND TANKS FOR ALL PURPOSES

Gallons.	Inside Diameter.	Inside Depth.	No. of Hoops.	Shipping Weight.	Price Complete, Riveted Hoops.	Price of Lugs, Extra.	Gallons.	Inside Diameter.	Inside Depth.	No. of Hoops.	Shipping Weight.	Price Complete, Riveted Hoops.	Price of Lugs, Extra.
	ft. in	ft. in.		lbs.				ft. in.	ft. in.		lbs.		
29184	18.0	15.4	12	6750	$219 45	$18 05	12101	19.6	5.5	6	3871	$125 20	$ 8 00
31087	18.0	16.6	13	7083	238 65	19 30	14335	19.6	6.5	7	4305	139 80	9 70
32990	18.0	17.4	13	7408	240 90	19 75	16569	19.6	7.5	8	4673	153 15	10 95
10891	18.6	5.5	6	3580	115 30	7 35	18803	19.6	8.5	9	5026	163 40	12 00
12902	18.6	6.5	7	3901	125 75	7 95	21037	19.6	9.5	9	5367	174 75	14 25
14912	18.6	7.5	8	4309	139 45	9 85	23271	19.6	10.6	9	5656	192 30	14 70
16923	18.6	8.5	9	4655	150 80	11 10	25502	19.6	11.5	11	6109	199 35	17 00
18934	18.6	9.5	9	4913	158 85	11 10	27550	19.6	12.6	11	6377	215 95	17 00
20944	18.6	10.6	9	5254	178 25	12 00	29784	19.6	13.4	11	6653	215 95	17 00
22954	18.6	11.5	10	5591	181 05	13 05	32018	19.6	14 6	11	6967	234 65	17 00
24796	18.6	12.6	11	6018	203 65	17 00	34252	19.6	15.4	12	7539	245 75	19 50
26806	18.6	13.4	11	6280	203 65	17 00	36486	19.6	16.6	13	7908	266 80	20 75
28816	18.6	14.6	11	6534	219 80	17 00	38726	19.6	17.4	13	8246	269 35	21 25
30826	18.6	15.4	12	7000	227 45	18 05	40954	19.6	18.6	14	8610	289 45	22 45
32836	18.6	16.6	13	7416	249 65	19 95	12729	20.0	5.5	6	4036	130 85	8 00
34846	18.6	17.4	14	7754	252 50	21 00	15079	20.0	6.5	7	4347	140 75	9 25
11488	19.0	5.5	6	3780	122 15	8 00	17429	20.0	7.5	8	4792	155 70	10 95
13609	19.0	6.5	8	4217	136 90	10 30	19779	20.0	8.5	8	5072	164 45	10 95
15730	19.0	7.5	8	4485	145 30	10 30	22130	20.0	9.5	8	5352	173 20	10 95
17852	19.0	8.5	8	4830	156 50	10 95	24480	20.0	10.6	9	5804	197 25	14 25
19972	19.0	9.5	9	5176	167 80	10 95	26830	20.0	11.5	9	6160	200 00	14 70
22093	19.0	10.6	9	5530	187 85	14 75	28985	20.0	12.6	10	6520	220 60	15 30
24212	19.0	11.5	10	5890	191 25	15 95	31334	20.0	13.4	10	6885	223 65	15 95
26158	19.0	12.6	10	6156	208 00	15 95	33684	20.0	14.6	11	7245	244 30	17 00
28279	19.0	13.4	11	6504	210 90	16 75	36035	20.0	15.4	12	7734	252 00	19 50
30399	19.0	14.6	11	6770	227 65	16 75	38385	20.0	16.6	12	8010	269 50	19 50
32520	19.0	15.4	12	7366	239 85	19 50	40725	20.0	17.4	13	8459	274 70	21 20
34641	19.0	16.6	13	7723	260 00	20 75	43085	20.0	18.6	14	8834	296 85	22 05
36762	19.0	17.4	13	8057	262 40	21 20	45435	20.0	19.4	15	9281	302 05	24 15
38883	19.0	18.6	14	8442	283 65	22 45							

NOTE.—These prices on all tanks up to and including 20 feet in diameter are based on 2-inch thick material; all tanks 22 feet in diameter, and over, are based on 3-inch thick material. All tanks above 15,000 gallons capacity are ordinarily made of thicker material than 2-inch. However, we often make tanks of 25,000 and 30,000 gallon capacity of 2-inch Cypress.

15402	22.0	5.5	6	6596	$211 85	$10 90	58657	24.0	17.4	15	14690	$472 55	$23 50
18246	22.0	6.5	7	7164	230 30	12 15	65426	24.0	19.4	16	16142	520 70	26 00
21090	22.0	7.5	7	7649	245 60	12 60	72194	24.0	21.4	17	17340	559 90	27 70
23933	22.0	8.5	8	8217	264 00	13 85	78962	24.0	23.4	18	18467	595 30	28 95
26777	22.0	9.5	8	8798	282 90	15 10	60897	26.0	15.4	13	15134	487 55	21 20
29620	22.0	10.6	9	9518	315 75	16 35	68840	26.0	17.4	15	16545	533 65	23 95
32464	22.0	11.5	9	9828	315 75	16 35	76784	26.0	19.4	16	17925	578 45	26 65
35071	22.0	12.6	10	10570	349 45	18 05	84727	26.0	21.4	18	19566	633 30	32 80
37914	22.0	13.4	10	10890	349 80	18 05	92761	26.0	23.4	19	20810	673 10	34 50
40758	22.0	14.6	11	11684	385 40	18 25	70627	28.0	15.4	15	13247	558 55	27 25
43601	22.0	15.4	12	12196	393 00	20 15	79840	28.0	17.4	16	18573	601 40	29 05
46445	22.0	16.6	13	12895	425 05	21 20	89052	28.0	19.4	17	20022	648 80	31 55
49289	22.0	17.4	14	13311	429 05	22 45	98264	28.0	21.4	18	21448	693 90	33 25
52132	22.0	18.6	15	14015	461 25	23 50	107476	28.0	23.4	19	22816	738 00	35 30
54976	22.0	19.4	16	14556	469 95	26 00	81077	30.0	15.4	13	18720	605 75	26 10
57819	22.0	20.6	17	15350	505 55	27 70	91653	30.0	17.4	14	20161	651 40	27 80
60663	22.0	21.4	17	15666	505 55	27 70	102228	30.0	19.4	18	22072	713 95	33 70
45121	24.0	13.4	10	12254	393 80	17 20	112803	30.0	21.4	19	23574	763 65	35 40
51889	24.0	15.4	12	13464	432 90	19 50	123379	30.0	23 4	20	25076	812 10	37 10

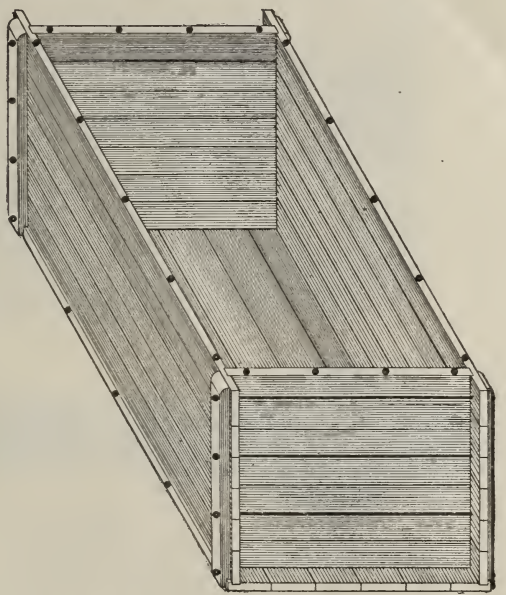
The above capacities are based on tanks having straight staves, but, unless otherwise ordered, we usually make them with a slight taper.

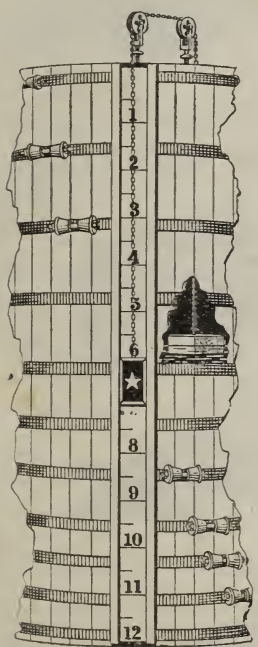
We guarantee the capacities as above to be correct. We guarantee weights given to be correct.

NOTE.—Although our lists are based on 2-inch, we recommend 1½-inch Red Cypress as being ample in thickness for tanks 8x8 and under, in the manner we hoop them. This makes a very cheap tank and a good one.

RECTANGULAR TANKS.

We make these tanks in any size wanted. They are used very extensively for Dye Tubs by Woolen Mills; for Acid and Pickling Tanks by Rolling Mills; for Brine Tanks by Ice Manufacturers; for Surface Coolers by Brewers; for Stock Tanks by Farmers, etc., etc. Prices quoted on application.





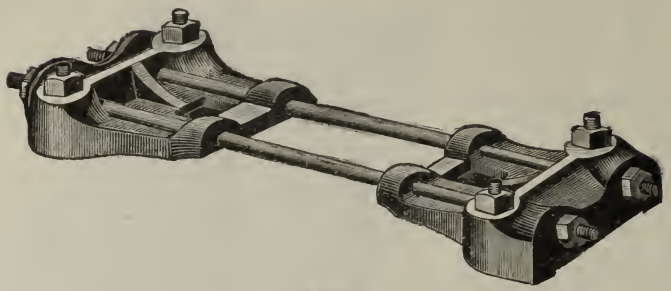
This guage is laid off in feet and decimals of a foot, having a white background with three inch figures painted thereon in black, and is furnished with a brass chain for attaching the sliding gauge and a galvanized iron float with pulleys over which the chain runs.

This is neat and substantial and inexpensive.

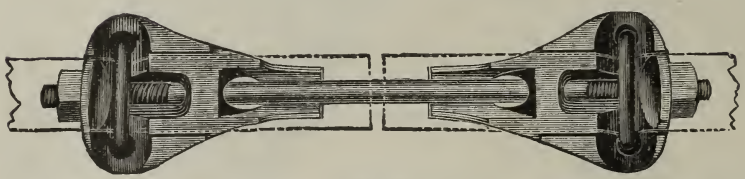
PRICE LIST.

For Tanks 6 ft. and less in height	$ 4.80
" " 7 " to 8 ft. in height (inclusive)	6.00
" " 9 " " 10 " " " "	7.80
" " 11 " " 14 " " " "	10.20
" " 15 " " 18 " " " "	13.20
" " 19 " " 20 " " " "	15.60
" " 21 " " 24 " " " "	18.00
" " 25 " " 26 " " " "	21.60

THE WINSHIP PATENT IRON LUG.



5333 a



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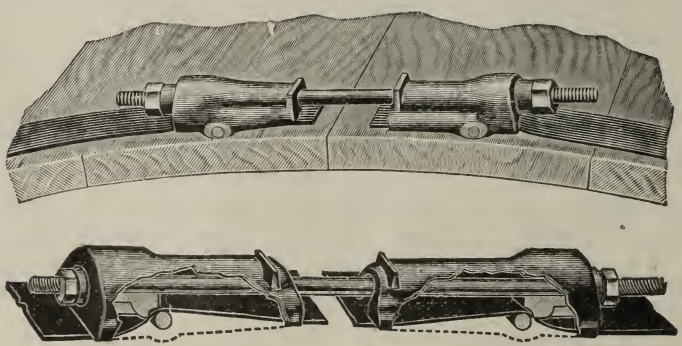
THE SCOTT PATENT MALLEABLE IRON LUG.



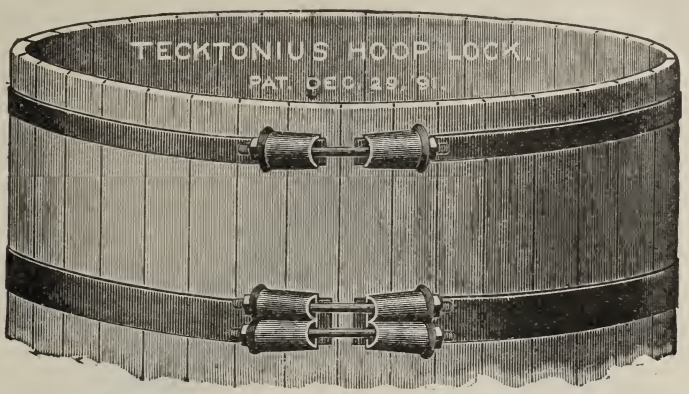
PRICE LIST OF

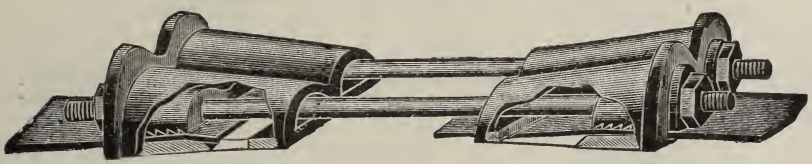
THE SCOTT AND WINSHIP PATENT MALLEABLE IRON LUGS.

	Per Pair.		Per Pair.
1½ inch Patent Lugs	$ 0 40	3½ inch Patent Lugs	$1 50
2 " " "	60	4 " " "	2 00
2½ " " "	80	5 " " "	3 00
3 " " "	1 00	6 " " "	3 50

WRITE FOR DISCOUNTS.

Why should Patent Lugs be used on all Tanks?
Because of the convenience in tightening the hoops at will.

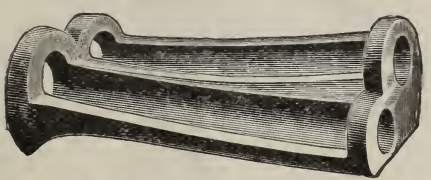


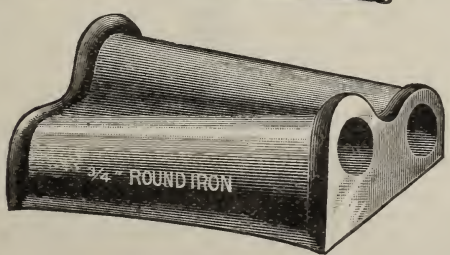


PRICE LIST OF

THE TECKTONIUS PATENT MALLEABLE IRON LUG.

	Per Pair.
1½ inch Patent Lugs	$0 40
2 " " "	60
2½ " " "	80
3 " " "	1 00
3½ " " "	1 50
4 " " "	2 00
5 " " "	3 00
6 " " "	3 50



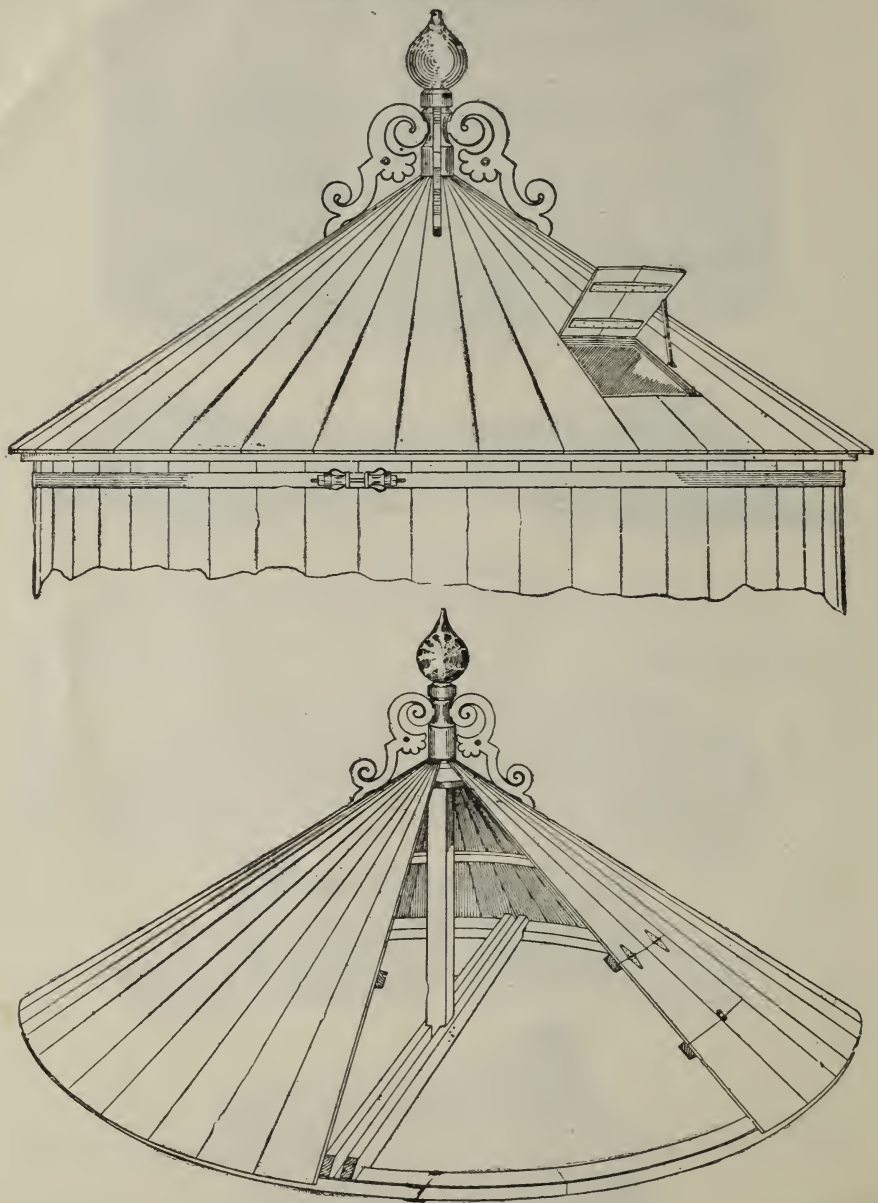


ROUND LUGS.

	Each.
½ inch	$0 30
⅝ "	40
¾ "	50
⅞ "	60
1 "	80

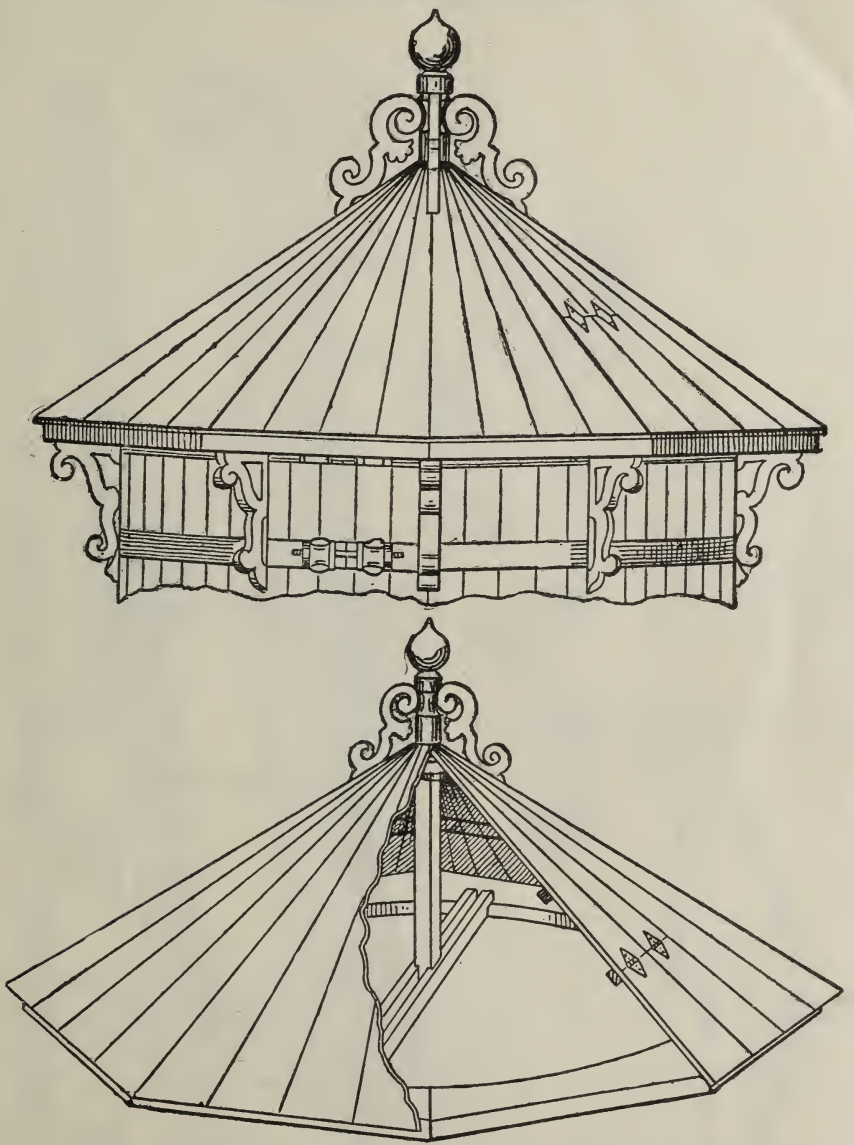
WRITE FOR DISCOUNTS.

PLAIN CONICAL COVERS



						Weight.	Price.
Cover for Tank,	6	feet	6	inches	diameter.....	200 lbs.	$10 00
Cover	8	"	0	"	"	300 "	14 00
Cover	10	"	0	"	"	450 "	18 00
Cover	12	"	6	"	"	775 "	22 00
Cover	14	"	0	"	"	1050 "	28 00
Cover	16	"	0	"	"	1150 "	36 00
Cover	18	"	0	"	"	1500 "	50 00
Cover	19	"	6	"	"	1800 "	80 00
Cover	22	"	0	"	"	2000 "	115 00
Cover	24	"	0	"	"	2300 "	143 00
Cover	26	"	0	"	"	2800 "	195 00

FANCY CONICAL COVERS

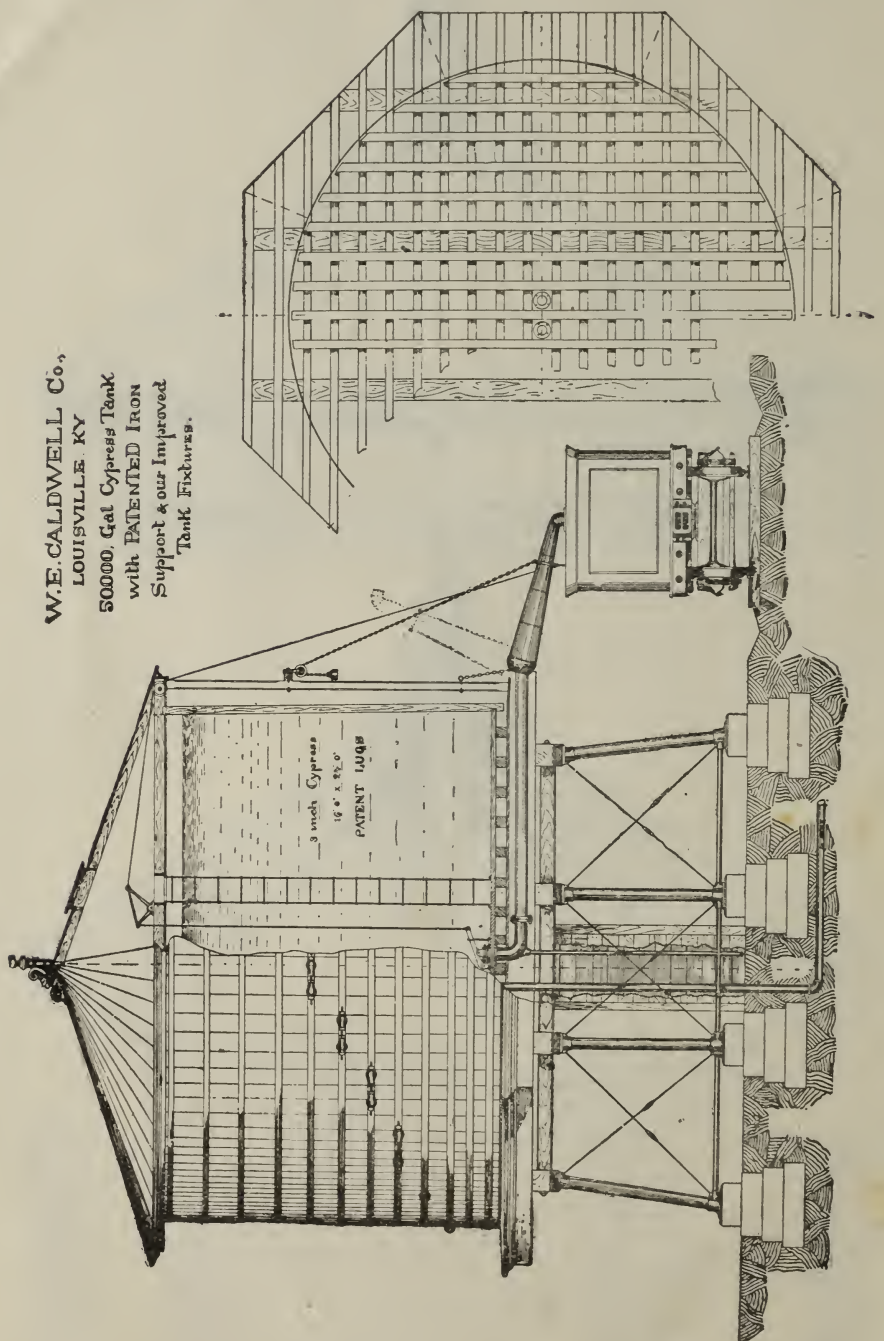


		Weight	Price
Cover for Tank,	6 feet 6 inches diameter	390 lbs.	$22 00
Cover "	8 " 0 " "	500 "	26 00
Cover "	10 " 0 " "	700 "	32 00
Cover "	12 " 6 " "	1,050 "	40 00
Cover "	14 " 0 " "	1,400 "	52 00
Cover "	16 " 0 " "	1,600 "	63 00
Cover "	18 " 0 " "	2,000 "	78 00
Cover "	19 " 6 " "	2,400 "	110 00
Cover "	22 " 0 " "	2,800 "	147 00
Cover "	24 " 0 " "	3,300 "	186 00
Cover "	26 " 0 " "	4,000 "	250 00

Prices include the Fancy Brackets under Eaves of Tank. We can furnish Shingles with these Covers when so desired.

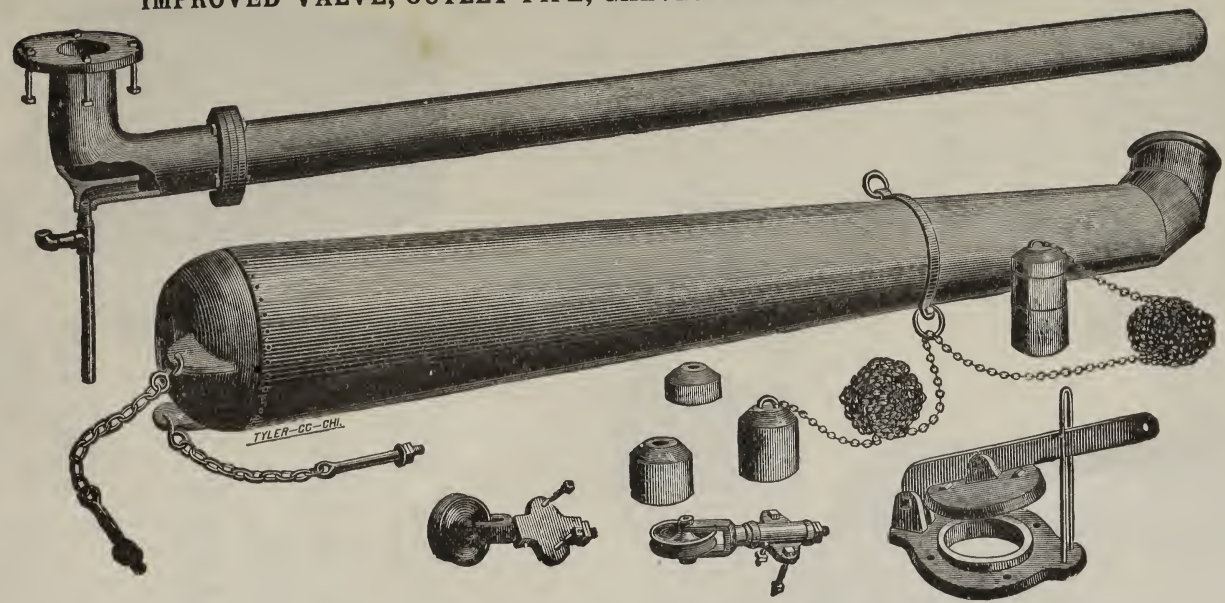
IMPROVED VALVE, OUTLET PIPE, SPOUT, AND FIXTURES

In use on many of the leading roads of the United States.



Why is Cypress the Best Wood for Tanks?
Because it does not warp or twist when exposed to the weather.

IMPROVED VALVE, OUTLET PIPE, GALVANIZED SPOUT AND FIXTURES



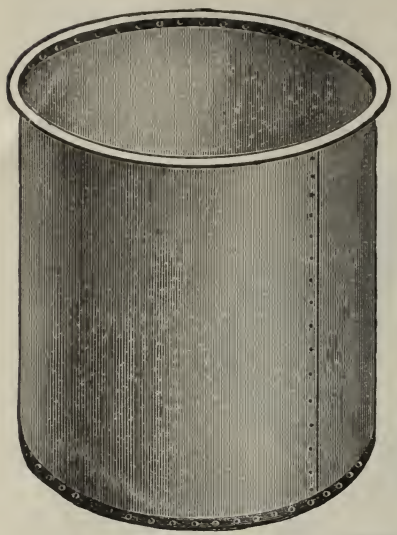
The above cut represents our Improved Tank Fixtures and Tank Outlet Valve, which are strictly frost proof. We furnish these in three sizes—6, 7 and 8 inch.

	6 in.	7 in.
Fixtures for 16 foot diameter Tank	$65 00	$75 00
" " 20 " "	70 00	80 00
" " 24 " "	75 00	85 00
" " 30 " "	82 50	92 50

Tank Outlet Valves (as per cut); also Tank Float Valves—

For 1 inch pipe	$2 25	For 4 inch pipe	$ 8 00
" 1¼ "	2 50	" 5 "	10 00
" 1½ "	3 00	" 6 "	12 00
" 2 "	4 00	" 7 "	15 00
" 2½ "	5 00	" 8 "	18 00
" 3 "	6 00		

Why is Cypress the best wood for Tanks?
Because it has not the knots and defects found in White Pine and other woods.



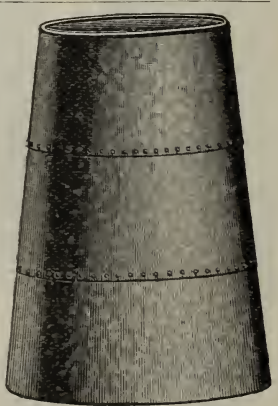
Reliable Galvanized Steel ROUND STORAGE TANKS

SEE CUT.

PRICE LIST

Number.	Diameter.	Height.	Capacity.	Price.
9	4 feet	3 feet	9 barrels	$ 11 00
10	4 "	4 "	12 "	13 00
11	4 "	5 "	15 "	15 50
12	5 "	4 "	19 "	19 00
13	5 "	5 "	24½ "	23 00
14	6 "	4 "	27 "	25 00
15	6 "	5 "	34 "	30 00
16	8 "	5 "	60 "	45 00
17	8 "	8 "	90 "	65 00
18	10 "	8 "	150 "	90 00
19	10 "	10 "	180 "	100 00

We can furnish these tanks in any size wanted.
Prices do not include covers. When required they will be supplied at proportionate additional prices.



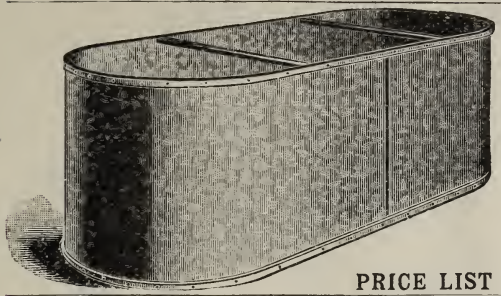
Galvanized Steel DERRICK TANKS

SEE CUT.

PRICE LIST

Number.	Diameter.	Height.	Capacity.	Price.
45	Bottom 4½ ft. Top 3 ft.	6½ feet	16 Barrels	$26 50
46	" 5 " " 3½ "	7 "	22 "	33 50
47	" 5½ " " 4 "	7½ "	30 "	37 50
48	" 5½ " " 3¾ "	10 "	40 "	50 00

We can furnish these tanks in any size wanted.
When desired we will supply covers with derrick tanks at a slight additional charge.



Reliable Galvanized Steel

ROUND END RECTANGULAR TANKS

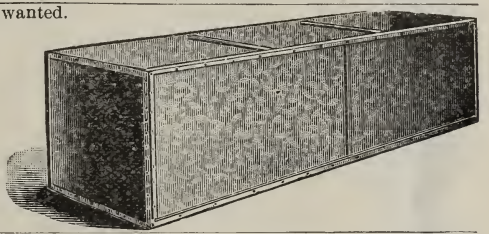
PRICE LIST

Number.	Width.	Height.	Length.	Capacity.	Price.
23	2 feet	2 feet.	4 feet.	$3\frac{3}{4}$ barrels	$ 7 00
24	2 "	2 "	6 "	$5\frac{3}{4}$ "	9 00
25	2 "	2 "	8 "	7 "	11 00
26	$2\frac{1}{2}$ "	2 "	8 "	9 "	12 50
27	3 "	2 "	8 "	11 "	13 50
28	4 "	2 "	8 "	14 "	16 50
29	3 "	2 "	10 "	$13\frac{1}{2}$ "	15 50
30	4 "	2 "	10 "	$17\frac{1}{2}$ "	20 00
31	4 "	2 "	16 "	28 "	30 00

We can furnish these tanks in any size wanted.

Reliable Galvanized Steel

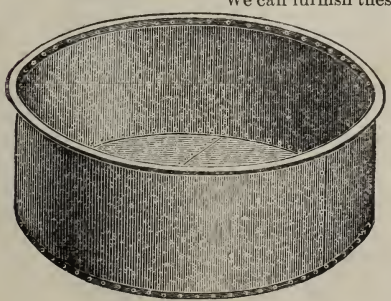
RECTANGULAR TANKS



PRICE LIST

Number.	Width.	Height.	Length.	Capacity.	Price.
33	2 feet.	2 feet.	4 feet.	4 barrels	$ 7 70
34	2 "	2 "	6 "	6 "	9 90
35	2 "	2 "	8 "	$7\frac{1}{2}$ "	12 10
36	$2\frac{1}{2}$ "	2 "	8 "	$9\frac{1}{2}$ "	13 20
37	3 "	2 "	8 "	12 "	14 30
38	4 "	2 "	8 "	15 "	18 15
39	3 "	2 "	10 "	14 "	17 00
40	4 "	2 "	10 "	19 "	22 00
41	4 "	2 "	16 "	30 "	33 00

We can furnish these tanks in any size wanted.



Reliable Galvanized Steel

ROUND STOCK TANKS

Nos. 1 to 3 shipped set up or knocked down. Larger sizes must be knocked down.

Made of heavy galvanized steel, best quality, with all seams thoroughly riveted or double seamed, and soldered, except when shipped knocked down; in the latter case the parts are nicely fitted and drilled for rivets or bent for double seams that can be locked and prepared for soldering as easily as they can be riveted, and any mechanic can do the work by following instructions given.

PRICE LIST

Number.	Diameter.	Height.	Capacity.	Price.
1	4 feet.	2 feet.	6 barrels.	$ 9 00
2	5 "	2 "	$9\frac{1}{2}$ "	11 50
3	6 "	2 "	14 "	16 50
4	8 "	2 "	24 "	24 00
5	10 "	2 "	$37\frac{1}{2}$ "	34 00

We can furnish these tanks in any size wanted. Prices do not include covers. They can be supplied at proportionate additional prices when required.

PIPE AND FITTINGS.—Wrought Pipe

Nomin'l Inside Diam. In.	Price Black Per Foot.	Price Galvanized Per Foot.	Nominal Thickness Inches.	Nominal Weight Per Ft. Lbs.	Nomin'l Inside Diam. In.	Price Black Per Foot.	Price Galvanized Per Foot.	Nominal Thickness Inches.	Nominal Weight Per Ft. Lbs.
⅛	$0 08½	$0 18	.068	0.24	4½	$1 40	$2 30	.246	12.49
¼	08½	16	.088	0.42	5	1 55	2 55	.259	14.50
⅜	08½	16	.091	0.56	6	1 95	3 20	.280	18.76
½	10½	17	.109	0.84	7	2 53	4 30	.301	23.27
¾	11½	19	.113	1.12	8	2 95	5 20	.322	28.18
1	16½	26	.134	1.67	9	3 80		.344	33.70
1¼	22	36	.140	2.24	10	4 50		.366	40.00
1½	27	44	.145	2.68	11	5 30		.375	45.00
2	36	59	.154	3.61	12	5 75		.375	49.00
2½	57	91	.204	5.74	13	6 50		.375	54.00
3	75	1 20	.217	7.54	14	7 25		.375	58.00
3½	93	1 60	.226	9.00	15	8 00		.375	62.00
4	1 07	1 75	.237	10.66					

FITTINGS FOR WROUGHT IRON PIPE

PRICE EACH

Sizes.....	⅜	½	¾	1	1¼	1½	2	2½
ELLS—45 degrees.....	$0.10	$0.10	$0.15	$0.20	$0.26	$0.35	$0.50	$1.30
Malleable.....	07	09	15	22	32	38	60	1.25
Galvanized.....	09	12	18	30	45	55	85	1.60
TEES—Malleable.....	08	09	18	29	40	48	75	1.40
Galvanized.....	10	14	20	36	55	85	1.20	2.25
CROSSES—Malleable...	10	12	20	30	42	55	85	2.00
Galvanized,	15	20	32	50	80	1.00	1.60	3.00
REDUCERS–Malleable,	06	09	12	18	25	36	50	75
Galvanized	08	11	16	25	35	45	60	85
PLUGS—Malleable.....	03	04	05	06	10	13	20	35
Galvanized....	05	06	08	10	15	23	35	57
BUSHINGS–Malleable,	05	06	07	09	13	17	27	42
Galvanized,	06	07	10	14	21	30	44	59
CAPS—Malleable.....	04	05	08	12	15	22	30	50
Galvanized.....	05	07	11	15	20	30	40	65
COUPLINGS—Plain...	06	07	10	13	17	21	28	40
Galvanized,	08	10	13	18	25	32	40	55
NIPPLES—Short.....	06	07	09	10	14	17	25	56
Long.....	09	10	11	15	20	25	35	75
Galvanized, Short,	08	09	11	13	17	23	32	65
Galvanized, Long,	11	13	16	19	24	31	40	85
Long Screw-Lock Nuts..	35	40	55	75	1.00	1.30	1.70	2.70
LOCK NUTS–Malleable	04	06	07	08	10	12	25	40
Galvanized,	05	07	09	10	12	16	32	60
UNIONS—Malleable....	20	22	27	33	46	58	75	1.55
Galvanized..	30	33	40	50	70	90	1.15	2.35
UNIONS—Flange.....			1.25	1.40	1.60	2.00	2.50	3.00

VALVES, EXPANSION JOINTS AND HOSE

GLOBE VALVES.

Sizes	⅛	¼	⅜	½	¾	1	1¼	1½	2
Steam Metal	$0.60	$0.60	$0.75	$1.00	$1.35	$1.80	$2.80	$3.90	$5.90

ANGLE VALVES.

Sizes	⅛	¼	⅜	½	¾	1	1¼	1½	2
Steam Metal	$0.60	$0.60	$0.75	$1.00	$1.35	$1.80	$2.80	$3.90	$5.90

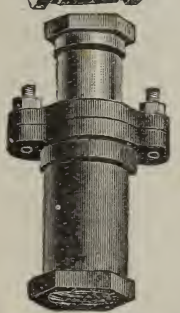
CHECK VALVES.

Horizontal or Vertical.

Sizes	⅛	¼	⅜	½	¾	1	1¼	1½	2
	$0.50	$0.50	$0.60	$0.85	$1.15	$1.55	$2.30	$3.25	$5.20

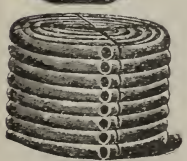
GATE VALVES.

Sizes	2	2½	3	3½	4	4½	5
Iron Body, Brass Trimmings	$10.00	12.00	15.00	18.00	20.00	23.00	25.00
Sizes	6	7	8	9	10	12	
Iron Body, Brass Trimmings	$30.00	43.00	53.00	60.00	70.00	95.00	



EXPANSION JOINTS.

Sizes	2	2½	3	3½	4	5
Iron Body, Brass Sleeve	$7.00	8.00	10.00	14.00	18.00	38.00
Sizes	6	7	8	9	10	12
Iron Body, Brass Sleeve	$45.00	70.00	100.00	110.00	160.00	225.00



GARDEN, MILL AND FIRE HOSE.

Sizes	½	¾	1	1¼	1½	1¾
2-ply, per foot	$0.20	$0.25	$0.33	$0.42	$0.50	$0.58
3-ply, per foot	.25	.30	.40	.50	.60	.70
4-ply, per foot	.30	.37	.50	.67	.75	.87

Sizes	2	2¼	2½	2¾	3	4
2-ply, per foot	$0.66	$0.75	$0.83	$0.92	$0.99	$1.32
3-ply, per foot	.80	.90	1.00	1.10	1.20	1.60
4-ply, per foot	1.00	1.12	1.25	1.37	1.50	2.00

NOZZLES.

Sizes	¾	1	1¼	1½	2	2½
Screw Tip. 6 in. long,	$0.60	$0.75	.....	.....	.....	.....
8 in. long,	.70	.85	.....	.....	.....	.....
12 in. long,	.85	1.00	$1.70	$2.10	$3.20	.....
15 in. long,	.....	.....	2.00	2.50	.....	$6.25

FIRE PROTECTION AND WATER SUPPLY

FOR

MANUFACTURING PLANTS

The outfit we illustrate on opposite page of catalogue is similar to hundreds which we have furnished for use all over the country, both for independent fire protection systems and in connection with automatic sprinkler equipments. The saving in cost of insurance accomplished by the installation of such an outfit is so great that hundreds of mills and factories are added each year to the thousands already so equipped. This is particularly the case with outfits put in for use in connection with sprinkler systems.

When the sprinkler people guarantee, by putting in their equipment, to secure such a reduction in your premium rates (from the very best companies) as will pay for the investment in four or five years, the reason for this is readily apparent.

We don't sell or install automatic sprinklers, but we manufacture tanks and towers for use in connection with them; one of the iron clad requirements of the insurance companies being that two sources of supply for the sprinklers must be provided, and one of these is almost invariably an elevated tank. The bottom of this tank must be 15 feet above the highest sprinkler head in the plant, so that ordinarily a tower of considerable height is necessary to give sufficient elevation to the tank. The tank support or tower is nearly always erected above the ground where space will permit, as this plan has many advantages over that of erecting it on the building. Even where the walls of the building, and the foundations under them, are strong enough to carry the load, very long and heavy beams must generally be used to give a support to one or more legs of the tower, and these, with the heavy iron plates to go under them and the masonry work usually required to level up and prepare the walls, ordinarly makes such an outfit cost nearly as much as one built up from the ground—except where there are T walls on which the Tower can be supported. Then we can supply a 3 column or triangular tower to rest directly on the wall, so that the expensive beams mentioned above are not required. But it should not be forgotten that with either style of tower any accident to the building means the collapse of the tank and tank support, and a very serious loss that would be avoided if the tower were erected apart from the building.

Sometimes, a brick tower, for the special purpose of providing a support for the tank, forms a part of the building, when, of course, nothing more than the timbers or I beams, on which the tank bottom is to rest, is required. In such cases we furnish either the work complete or the tank only.

We make a specialty of this work in all its different phases, and our knowledge of this subject is so thorough, and our experience in the business so extended, that we can quite often help a customer with valuable suggestions as to the best plan for him to follow. We have testimonial letters from dozens of the leading firms in as many different lines of business, who will testify to the economy of such a system and the thorough reliability of our work, and shall be glad to refer any prospective customer to these firms, though the fact that our outfits are both endorsed and recommended by the principal insurance companies and the leading automatic sprinkler concerns is about as conclusive evidence on this point as could be desired.

State your requirements and write for prices and plans, and remember we build both tanks and towers of either iron or wood.

PATENT SECTIONAL STEEL TOWER

This illustration represents our 4 Column Sectional Steel Tower as built for supporting tanks for use in connection with Automatic Sprinklers for Fire Protection in manufacturing plants of all kinds.

SEE PRICES PAGE 23.

The above photo-engraving shows one of our 63 foot, 4 Column, Class F., Patent Sectional Steel Towers, with a tank 18 feet diameter, 16 feet high, 30,000 gallons capacity, erected for The Eastman Kodak Co., Kodak Park, Rochester, N. Y.

Besides this outfit, we have furnished them a number of other tanks, as well as a special tower to support both a 25,000 gallon and a 10,000 gallon tank, one tank above the other.

WATER WORKS SYSTEMS

FOR PRIVATE GROUNDS.

One of the most important questions that confronts the owner of a country or suburban home is that of securing and maintaining an adequate supply of water for the multitudinous purposes for which it is both useful and essential. Time was when he was content with barely sufficient to supply his necessities, but with the onward march of civilization and the growing wealth of the nation, more attention is given to contributing to the creature comforts, with the result that it is becoming the rule rather than the exception for private grounds to be fitted with their own complete water works systems, which are of almost inestimable value to this end.

These systems consist of a storage reservoir or source of supply which is generally elevated as the best means of obtaining the pressure required for forcing the water to the upper floors, a windmill or a small engine, either steam, hot air or gas, with a pump (and generally a heater), and, of course, piping for the necessary connections. An outfit of this character, and a first class one, can be put in at a nominal cost, and is certainly a wise investment, and one never regretted. It must not be forgotten, too, that such an equipment affords fire protection to the buildings and decreases the cost of insurance very materially.

The illustration on the opposite page represents an outfit of this character in use by Mr. W. T. Northington, of Prattville, Ala., the motive power being supplied by a wind mill erected upon a short stub steel tower that sets inside the tank. This photograph gives a very good idea of one feature of the CALDWELL TANK AND TOWER that makes it so desirable for use in connection with such a system, that is, its handsome and ornamental appearance, in which respect it greatly excels anything else of the kind on the market. It will be observed, too, that all the members of the tower are round and present practically no resistance at all to the wind. Another thing:—anybody with only an average amount of brains can put the structure together; no expert mechanic is necessary for that purpose. Where preferred, though, we include the erection in our contract.

If you are considering the installation of an equipment of this sort, don't fail to obtain our price; and, given the opportunity, we believe we can convince you no mistake will be made in putting in a CALDWELL outfit where the best results are desired. Our prediction is based on the fact that our customers say they give the best results, though possibly it is consideration for our feelings that leads them to make such a declaration.

PATENT SECTIONAL STEEL TOWER

This illustration represents our 4-Column Steel Tower as built for supporting Tanks of small capacities, the design being the same as the tower described on the following pages.

For Water Supply and Fire Protection to Suburban and Country Homes nothing else is so well adapted as a

CALDWELL TANK AND TOWER

This engraving represents a 5,500 gallon Cypress Tank supported by a 51 foot Sectional Steel Tower, being used by Mr. W. T. Northington, Prattville, Alabama.

SEE PRICES ON PAGE 23.

PATENT SECTIONAL STEEL TOWERS

This cut illustrates our 4-column Patent Steel Tower, which we build in sections, suitable to support Tanks of dimensions up to and including 20 feet in diameter and of 40,000 gallons capacity.

These Towers are strong, durable and attractive in appearance, and cost much less than Steel or Iron Towers of any other design, and, when **Durability** and **Strength** are considered, they are **MUCH CHEAPER** than any All Wooden Structures.

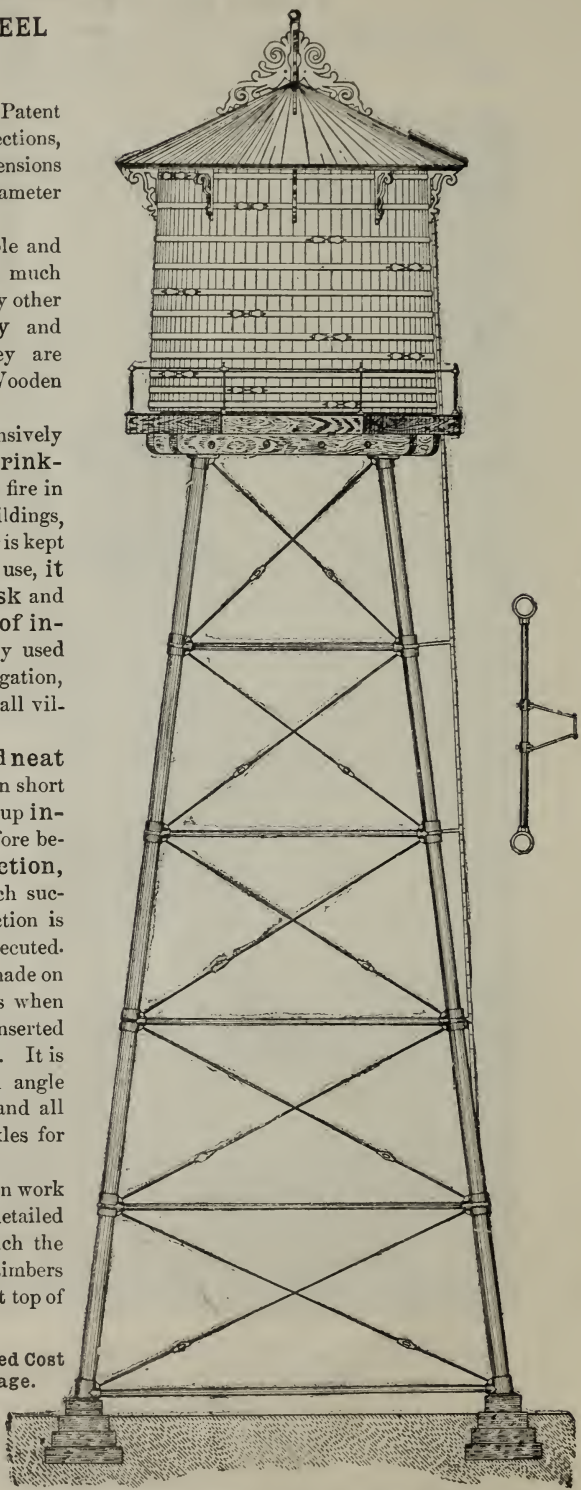
This style of Tower is used extensively in connection with **Automatic Sprinkler Plants** for protection against fire in mills, factories and other large buildings, as whenever a large storage of water is kept on hand, elevated and ready for use, **it greatly reduces the fire risk** and consequently **lessens the cost of insurance.** They are also largely used by gardeners and florists for irrigation, and also for water supplies for small villages and private grounds.

They are **strong, durable** and **neat in design,** and, as they are built in short sections, and **each section** is set up **independently** and **finished** before beginning to set up the **next section,** thus making a scaffolding for each succeeding section, the work of erection is therefore **easily** and **cheaply** executed.

The iron joint connections are made on angles such as will fit the columns when cut off square on each end and inserted into sockets in the iron couplings. It is all strongly bound together with angle brace rods, as shown in the cut, and all rods are provided with turn buckles for securing proper tension.

When desired, we furnish the iron work alone for **these towers** with a detailed plan and bill of material by which the customer may himself supply the timbers that form a support for the tank at top of tower.

See Prices of Towers and Estimated Cost of Foundations on Opposite Page.



This cut represents our 63-foot Steel Tower and 30,000 gallon Cypress Tank.

4-COLUMN PATENT SECTIONAL STEEL TOWERS

CLASS O

Height in Feet.	Capacities of Tanks that Towers will Support.	Shipping Weight Tower Complete.	Cost of Tower Complete.	Shipping Weight of Frost Proofing Material.	Cost of Frost Proofing forTop and Bottom of Tank.	Estimated Cost of Foundations.
15		1,569 lbs.	$ 74 25			$7 50
27	1,500	2,113 "	114 90			7 50
39	gallons	2,713 "	158 50	200 lbs.	$10 25	7 50
51	and	3,418 "	208 65			7 50
63	less.	4,185 "	262 30			7 50
75		5,000 "	318 25			7 50
		CLASS A				
15		2,226 lbs.	$ 95 75			$12 50
27	2,000	2,933 "	145 30			12 50
39	to	3,714 "	198 60	275 lbs.	$14 65	12 50
51	3,000	4,525 "	255 15			12 50
63	gallons.	5,436 "	315 45			12 50
75		6,361 "	378 25			12 50
		CLASS B				
15		3,301 lbs.	$130 80			$15 00
27	4,000	4,317 "	198 35			15 00
39	to	5,419 "	268 15	425 lbs.	$23 20	15 00
51	6,000	6,650 "	344 95			15 00
63	gallons.	7,929 "	425 75			15 00
75		9,263 "	507 80			15 00
		CLASS C				
15		4,935 lbs.	$180 75			$20 00
27	7,000	6,414 "	272 80			20 00
39	to	8,000 "	371 10	850 lbs.	$40 25	20 00
51	10,000	9,712 "	475 90			20 00
63	gallons.	11,548 "	586 95			20 00
75		13,507 "	704 80			20 00
		CLASS D				
15		6,721 lbs.	$233 80			$30 00
27	12,000	8,443 "	350 85			30 00
39	to	10,281 "	475 40	1,075 lbs.	$51 45	30 00
51	15,000	12,238 "	607 20			30 00
63	gallons.	14,318 "	746 25			30 00
75		16,518 "	902 55			30 00
		CLASS E				
15		8.640 lbs.	$ 297 65			$40 00
27	15,000	10,828 "	436 45			40 00
39	to	13,165 "	583 25	1,350 lbs.	$65 00	40 00
51	20,000	15,652 "	738 55			40 00
63	gallons.	18,296 "	901 85			40 00
75		21,086 "	1,069 40			40 00
		CLASS F				
15		10,515 lbs.	$ 364 25			$50 00
27	20,000	13,083 "	528 55			50 00
39	to	15,747 "	701 35	1,575 lbs.	$79 80	50 00
51	30,000	18,677 "	882 15			50 00
63	gallons.	21,865 "	1,071 20			50 00
75		24,939 "	1,268 50			50 00
		CLASS G				
15		16,228 lbs.	$ 644 15			$60 00
27	30,000	19,384 "	848 05			60 00
39	to	22,723 "	1,061 85	2,000 lbs.	$98 20	60 00
51	40,000	26,243 "	1,285 05			60 00
63	gallons.	29,949 "	1,518 60			60 00
75		33,850 "	1,762 15			60 00

The heights above given are Standard and are from the ground or grade line to the bottom of the Tank. Note the shipping weights given. We guarantee them to be correct.

The prices of Towers include the Foundation at Top of Tower for Tank with extension for Octagonal Walk-way with Iron Hand-rail and with Iron Ladder, as shown in cut on opposite page.

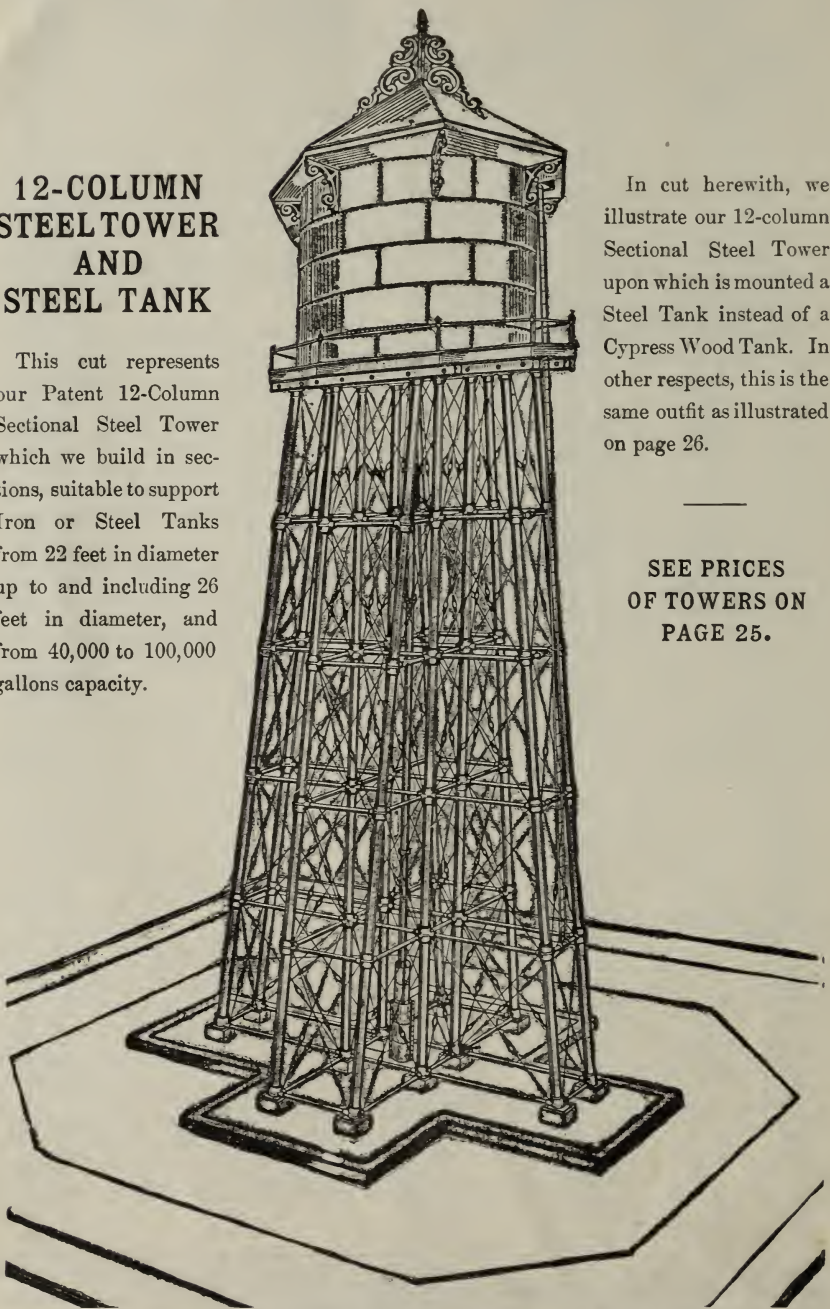
These Towers take a very low rate of freight. Write for delivered prices.

We also build these Towers in Heights of 87 and 100 feet when desired.

SEE CUT ON OPPOSITE PAGE.

12-COLUMN STEEL TOWER AND STEEL TANK

This cut represents our Patent 12-Column Sectional Steel Tower which we build in sections, suitable to support Iron or Steel Tanks from 22 feet in diameter up to and including 26 feet in diameter, and from 40,000 to 100,000 gallons capacity.



In cut herewith, we illustrate our 12-column Sectional Steel Tower upon which is mounted a Steel Tank instead of a Cypress Wood Tank. In other respects, this is the same outfit as illustrated on page 26.

SEE PRICES OF TOWERS ON PAGE 25.

This cut represents our 63-foot Steel Tower and 100,000 gallon Steel Tank.

TWELVE-COLUMN PATENT SECTIONAL STEEL TOWERS

[See Cuts on Pages 24 and 26.]

CLASS X.

Height.	Capacities of Tanks Towers Will Support.	Weight Complete.	Cost Complete.	Weight Frost Proofing Material.	Cost of Frost Proofing for Top and Bottom of Tank.
27 feet.	40,000 to 50,000 gallons.	20,700 lbs.	$ 851 25	2,450 lbs.	$110 00
39 "		25,700 "	1,140 40		
51 "		30,825 "	1,435 30		
63 "		36,075 "	1,737 00		
75 "		41,430 "	2,044 65		
87 "		46,925 "	2,359 05		
100 "		52,525 "	2,680 15		

CLASS Y.

Height.	Capacities of Tanks Towers Will Support.	Weight Complete.	Cost Complete.	Weight Frost Proofing Material.	Cost of Frost Proofing for Top and Bottom of Tank.
27 feet.	50,000 to 65,000 gallons	26,360 lbs.	$1,090 80	2,950 lbs.	$132 00
39 "		32,760 "	1,462 70		
51 "		39,300 "	1,842 05		
63 "		46,000 "	2,228 85		
75 "		52,800 "	2,623 75		
87 "		59,800 "	3,026 30		
100 "		67,000 "	3,437 80		

CLASS Z.

Height.	Capacities of Tanks Towers Will Support.	Weight Complete.	Cost Complete.	Weight Frost Proofing Material.	Cost of Frost Proofing for Top and Bottom of Tank.
27 feet.	65,000 to 80,000 gallons.	28,750 lbs.	$1,256 05	2,950 lbs.	$132 00
39 "		36,000 "	1,673 95		
51 "		43,400 "	2,119 75		
63 "		51,000 "	2,572 30		
75 "		58,650 "	3,034 85		
87 "		66,400 "	3,501 40		
100 "		74,500 "	3,980 50		

CLASS W.

Height.	Capacities of Tanks Towers Will Support.	Weight Complete.	Cost Complete.	Weight Frost Proofing Material.	Cost of Frost Proofing for Top and Bottom of Tank.
27 feet.	80,000 to 100,000 gallons.	37,900 lbs.	$1,762 35	3,500 lbs.	$160 00
39 "		47,000 "	2,340 90		
51 "		56,000 "	2,928 45		
63 "		65,200 "	3,526 00		
75 "		74,600 "	4,133 55		
87 "		84,250 "	4,748 10		
100 "		94,300 "	5,373 20		

The heights above given are Standard and are from the ground or grade-line to the bottom of the Tank. Note the shipping weights given. We guarantee them to be correct.

The prices of Towers include Foundation at Top of Tower for Tank with extension for Octagonal Walk-way with Iron Hand-Rail and with Iron Ladder, as shown in cut on opposite page.

These towers take a very low rate of freight. Write for delivered prices.

SEE CUT ON OPPOSITE PAGE, ALSO PAGE 26.

WATER WORKS OUTFIT

This illustration represents one of our 63-foot, 12 column, Steel Towers and a 50,000 gallon Cypress Tank erected by us for City Water Works at Deal Beach, Asbury Park, New Jersey.

WATER WORKS

The adaptability of the elevated tank system for water works for small cities, towns and villages, of a population of 25,000 and less, has long been recognized, and for this purpose there is nothing else equal to our **Patent Sectional Steel Tower** with either a Cypress or Steel Tank. Such an outfit makes a handsome appearance, will last indefinitely, and is certain to give the best of satisfaction, as hundreds of our customers will testify.

We make a specialty of furnishing water works jobs, and are pleased to give any information in this connection desired by towns purposing to install complete water works, or outfits for fire protection only.

Write for estimates and cuts.

WE HAVE INSTALLED PLANTS IN

ALABAMA.
Columbiana,
Marion,
Uniontown.

ARKANSAS.
Forrest City,
Warren.

CONNECTICUT.
Thompson.

DELAWARE.
Frederica.

FLORIDA.
Bartow,
Clearwater Harbor,
Jasper.

GEORGIA.
Baxley,
Eastman.

ILLINOIS.
Breese,
Ladd,
La Harpe,
Lebanon,
Loraine,
Mendon,
Plymouth,
Waynesville,
Weldon.

INDIANA.
Converse,
Royal Center.

IOWA.
Doon,
Granville,
Kingsley,
Orange City,
Remsen,
Rock Valley,
Sheldon,
Vail,
Waverly.

KANSAS.
Girard.

KENTUCKY.
Adairsville,
Shawnee Park, Louisville,
Middlesborough,
Princeton.

LOUISIANA.
Bastrop,
Plaquemine.

MAINE.
York Beach.

MARYLAND.
Havre-De-Grace,
Blue Ridge Summit,
Princess Anne.

MICHIGAN.
Sand Beach.

MISSISSIPPI.
Scranton,
Shuqualak.

MISSOURI.
Louisiana.

NEW JERSEY.
Lindenwold,
North Spring Lake,
Pitman Grove,
Westwood.

NEW YORK.
Barren Island,
Haines' Falls.

NEBRASKA.
Elmwood,
Rushville.

NEVADA.
Reno.

NORTH CAROLINA.
Aberdeen,
Concord.

OHIO.
Continental,
Marice City.

OKLAHOMA TERRITORY.
El Reno,

PENNSYLVANIA.
Delta,
Ephrata,
Linwood,
Osborn,
Wyalusing.

RHODE ISLAND.
Shawomet Beach.

SOUTH CAROLINA.
Pelzer.

TENNESSEE.
Brownsville,
Collierville,
Manchester.

TEXAS,
Shiner.

VIRGINIA.
Cape Charles,
Coeburn,
Onancock,
Waynesboro.

WEST VIRGINIA.
Charleston,
Lewisburg.

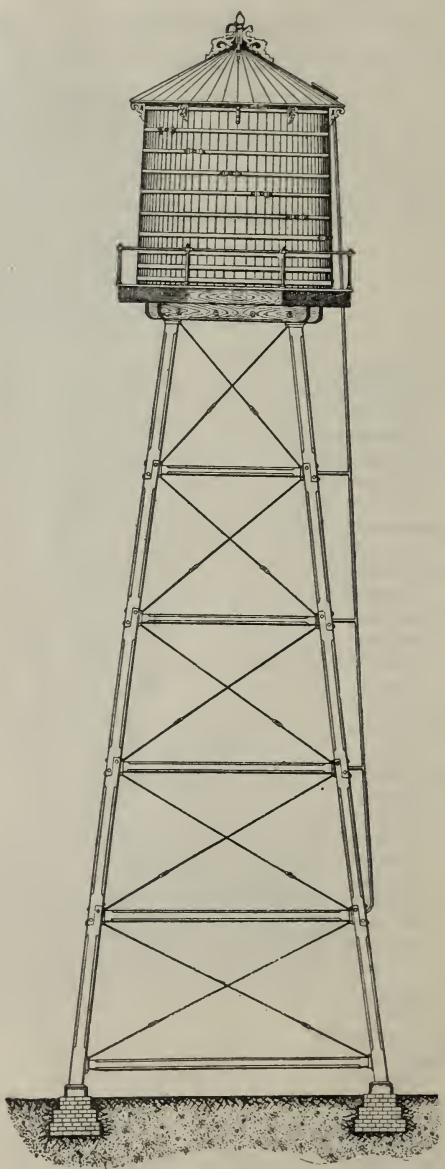
WISCONSIN.
Monroe.

SPECIAL COMBINED WOOD AND IRON TOWERS

This Combined Wood and Iron Tower is designed so as to do away with the features that have always made a wooden tower so objectionable; that is, there are no mortises and tenons to impair the strength of the structure, nor any brace seats or openings to collect water. These have always been the weak points in a wooden tower, especially the last named, as, of course, where the water could lodge in the sockets or brace seats it was a question of only a short time until the timber would rot out and give way; and an elimination of these objectionable features makes the durability of our Combined Wood and Iron Towers fully fifty per cent. greater than that of any wood tower yet designed. Of course, with no notches or holes the surfaces of the tower are smooth and unbroken, and can therefore be kept thoroughly painted throughout.

It will be seen that the tower is built on the same lines in general as our Sectional Steel Pipe Tower, the only difference being that wooden, instead of steel, columns and struts are used. The sway bracing is of iron, the same as in our steel tower, and we employ cast-iron connections to receive the struts or longitudinal ties which bind the sections together. We also retain another distinctive feature that has made our Sectional Steel Tower so successful which is the short sections in which it is built, which minimizes the cost of erection.

The tower will be found in every way fully deserving of the claim we make for it, that it is as much superior to any wooden tower as our standard Pipe Column Tower is superior to any other form of steel or iron tower.



COMBINED WOOD AND IRON TOWERS

Class O.

Height in Feet.	Capacities of Tanks Towers will Support.	Shipping Weight Iron Work.	Cost Iron Work.	Shipping Weight Tower Complete.	Cost of Tower Complete.	Prices of Plans, Specifications and Bills of Material Alone.	Estimated Cost of Foundations.
15		611 lbs.	$ 60 73	2,502 lbs.	$ 92 57	$ 3 75	$7 50
27	1,500	916 "	90 00	3.799 "	138 35	5 75	7 50
39	gallons	1,239 "	120 13	5,242 "	182 33	7 75	7 50
51	and	1,582 "	151 75	7,025 "	233 90	10 00	7 50
63	less.	1,942 "	184 65	8,617 "	285 25	12 50	7 50
75		2,323 "	219 13	10,726 "	344 58	16 00	7 50

Class A.

15		634 lbs.	$ 63 15	3,017 lbs.	$104 38	$ 5 00	$10 00
27	2,000	926 "	91 45	4,365 "	147 85	7 50	10 00
39	to	1,262 "	122 55	5,821 "	195 03	10 00	10 00
51	3,000	1,602 "	153 95	7,697 "	248 52	12 50	10 00
63	gallons.	1 962 "	186 85	9,289 "	299 13	15 00	10 00
75		2,332 "	220 50	11,483 "	359 00	20 00	10 00

Class B.

15		664 lbs.	$ 66 50	4,096 lbs.	$123 25	$ 6 75	$12 50
27	4,000	980 "	96 60	5,660 "	171 30	8 75	12 50
39	to	1,313 "	127 48	7,241 "	220 10	11 00	12 50
51	6,000	1,667 "	159 93	8,875 "	270 97	13 50	12 50
63	gallons.	2,039 "	193 73	10,479 "	322 50	16 50	12 50
75		2,435 "	229 08	12,795 "	385 42	20 00	12 50

Class C.

15		852 lbs.	$ 83 13	5,953 lbs.	$172 40	$ 7 50	$15 00
27	7,000	1,273 "	121 93	8,050 "	235 30	10 00	15 00
39	to	1,722 "	162 33	10,331 "	302 05	12 50	15 00
51	10,000	2,200 "	204 90	12,961 "	375 55	15 00	15 00
63	gallons.	2,709 "	249 80	15.818 "	454 20	22 50	15 00
75		3,255 "	297 48	18,804 "	536 95	25 00	15 00

Class D.

15		1,000 lbs.	$ 99 85	8,175 lbs.	$224 08	$10 00	$20 00
27	12,000	1,455 "	141 20	11,262 "	301 63	12 50	20 00
39	to	1,940 "	184 30	14,479 "	382 27	15 00	20 00
51	15,000	2,450 "	229 28	18,553 "	476 25	18 00	20 00
63	gallons.	2,995 "	276 88	22,498 "	570 60	23 00	20 00
75		3,570 "	326 73	26,733 "	682 30	30 00	20 00

Class E.

15		1,188 lbs.	$119 08	10,057 lbs.	$274 08	$12 50	$25 00
27	15,000	1,731 "	167 58	13,264 "	359 20	15 00	25 00
39	to	2,317 "	218 80	16,614 "	448 42	17 50	25 00
51	20,000	2,943 "	273 03	20,648 "	549 52	22 50	25 00
63	gallons.	3,619 "	331 00	24,724 "	654 25	28 00	25 00
75		4,333 "	392 33	29,322 "	779 32	35 50	25 00

Class F.

15		1,429 lbs.	$138 03	12,893 lbs.	$336 75	$17 00	$35 00
27	25,000	2,071 "	194 10	17,591 "	448 60	20 00	35 00
39	to	2,753 "	252 38	22,285 "	562 22	23 00	35 00
51	30,000	3,479 "	314 10	27,907 "	691 08	27 50	35 00
63	gallons.	4,249 "	379 13	33,585 "	823 58	35 00	35 00
75		5,065 "	447 60	39,817 "	983 50	42 50	35 00

The heights above given are Standard and are from the ground or grade-line to the bottom of the Tank. Note the shipping weights given. We guarantee them to be correct.

The prices of Towers include the Foundation at top of Tower for Tank with extension for Octagonal Walk-way with Iron Hand-rail and with Iron Ladder, as shown in cut.

Write for delivered prices.

We also build these Towers in heights of 87 and 100 feet when desired.

SEE CUT ON OPPOSITE PAGE.

ALL WOOD FRAMED TOWERS

On the next page we give prices of All Wood Towers illustrated by this cut.

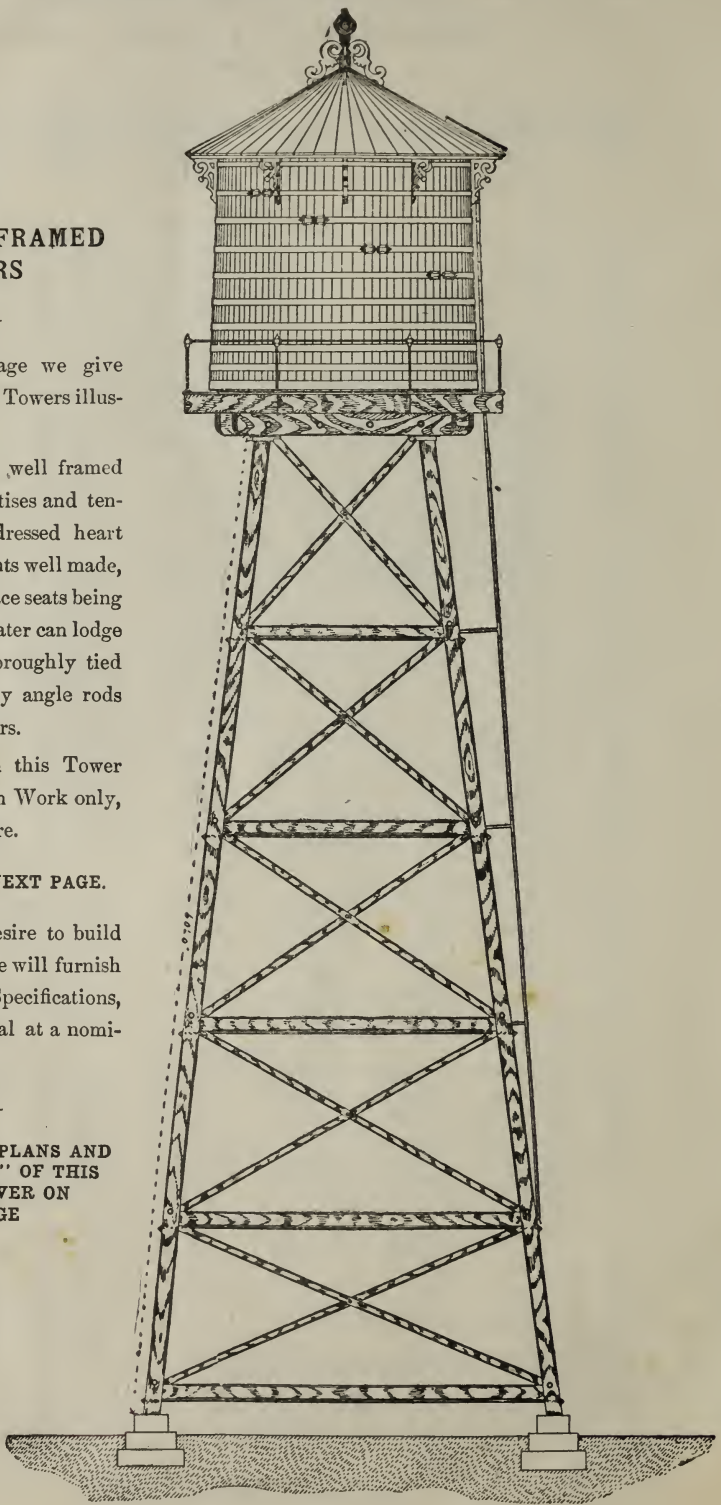
This Tower is a well framed structure, with mortises and tenons, all built of dressed heart timber and with joints well made, all mortises and brace seats being so formed that no water can lodge in them. It is thoroughly tied together with heavy angle rods and cast-iron washers.

We will furnish this Tower complete or the Iron Work only, as parties may desire.

SEE PRICES ON NEXT PAGE.

When Parties desire to build their own Towers we will furnish complete Plans, Specifications, and Bills of Material at a nominal price.

SEE "PRICES OF PLANS AND SPECIFICATIONS" OF THIS STYLE OF TOWER ON NEXT PAGE



ALL WOODEN TOWERS

[See Cut on Preceding Page.]

Height in Feet.	Capacities of Tanks Towers will Support.	Shipping Weight Iron Work.	Cost Iron Work.	Shipping Weight Tower Complete.	Cost of Tower Complete.	Prices of Plans, Specifications and Bills of Material Alone.	Estimated Cost of Foundations.
No. 1.							
15		127 lbs.	$22 10	2,636 lbs.	$ 59 40	$ 3 75	$7 50
27	1,500	241 "	31 45	4,970 "	91 95	5 75	7 50
39	gallons	364 "	41 70	5,490 "	128 20	7 75	7 50
51	and	503 "	53 20	7,340 "	187 50	10 00	7 50
63	less.	686 "	67 00	9,470 "	243 00	12 50	7 50
75		850 "	79 70	11,714 "	299 00	16 00	7 50
No. 2.							
15		135 lbs.	$25 10	2,068 lbs.	$ 73 80	$ 5 00	$10 00
27	2,000	255 "	35 10	4,326 "	108 85	7 50	10 00
39	to	384 "	45 65	4,780 "	147 60	10 00	10 00
51	3,000	530 "	57 45	6,546 "	209 40	12 50	10 00
63	gallons.	718 "	71 45	8,600 "	267 30	15 00	10 00
75		890 "	84 50	10,765 "	325 80	20 00	10 00
No. 3.							
15		200 lbs.	$27 55	3,830 lbs.	$ 96 75	$ 6 75	$12 50
27	4,000	330 "	38 00	5,670 "	139 85	8 75	12 50
39	to	465 "	49 35	8,486 "	186 60	11 00	12 50
51	6,000	610 "	61 40	11,060 "	267 45	13 50	12 50
63	gallons.	830 "	77 65	14,400 "	346 00	16 50	12 50
75		1,000 "	92 25	17,976 "	458 85	20 00	12 50
No. 4.							
15		200 lbs.	$30 55	5,220 lbs.	$125 45	$ 7 50	$15 00
27	7,000	346 "	41 65	7,340 "	174 45	10 00	15 00
39	to	487 "	53 45	9,596 "	227 00	12 50	15 00
51	10,000	638 "	66 00	12,170 "	313 70	15 00	15 00
63	gallons.	865 "	82 85	15,510 "	398 05	22 50	15 00
75		1,040 "	97 90	19,085 "	506 80	25 00	15 00
No. 5.							
15		255 lbs.	$ 35 15	7,335 lbs.	$179 25	$10 00	$20 00
27	12,000	410 "	48 35	10,020 "	239 25	12 50	20 00
39	to	585 "	62 60	13,170 "	309 25	15 00	20 00
51	15,000	780 "	78 30	16,505 "	427 35	18 00	20 00
63	gallons.	1,055 "	98 50	20,900 "	535 90	23 00	20 00
75		1,280 "	116 00	25,420 "	675 35	30 00	20 00
No. 6.							
15		268 lbs.	$ 42 70	8,885 lbs.	$211 55	$12 50	$25 00
27	15,000	432 "	56 30	11,750 "	271 80	15 00	25 00
39	to	616 "	70 90	15,090 "	342 15	17 50	25 00
51	20,000	820 "	87 00	18,620 "	460 45	22 50	25 00
63	gallons.	1,105 "	107 60	23,242 "	569 35	28 00	25 00
75		1,340 "	125 50	27,950 "	709 10	35 50	25 00
No. 7.							
15		275 lbs.	$ 46 90	11,535 lbs.	$276 60	$17 00	$35 00
27	20,000	455 "	61 70	15,840 "	361 35	20 00	35 00
39	to	645 "	77 30	20,635 "	453 90	23 00	35 00
51	25,000	950 "	93 90	25,940 "	623 25	27 50	35 00
63	gallons.	1,140 "	115 75	31,675 "	786 65	35 00	35 00
75		1,385 "	135 45	37,790 "	937 85	42 50	35 00

The heights above given are Standard and are from the ground or grade-line to the bottom of the Tank. Note the shipping weights given. We guarantee them to be correct.

The prices of Towers include the Foundation at top of Tower for Tank with extension for Octagonal Walk-way with Iron Hand-rail and with Iron Ladder, as shown in cut on opposite page.

Write for delivered prices.

We also build these Towers in heights of 87 and 100 feet when desired.

SEE CUT ON PRECEDING PAGE.

PLANS AND SPECIFICATIONS

For the benefit of those concerns that prefer to build their own towers and are situated so they can do so advantageously, that is, buy the timbers required and have them framed for less than they would cost with freight added if purchased from us, we would be glad to supply complete working plans and bills of material for our special wood and iron tower, cut of which is shown on page 28, at a nominal cost. This will insure the design of the tower being not only correct (which is, of course, of the first and greatest importance), but incomparably superior to the old style wooden tower with its defective features mentioned in the comparison made elsewhere between our special wood and iron tower and the old style wooden tower.

We also supply these plans and specifications for an all wood tower, as illustrated on page 30, which makes a very substantial structure and, at the same time, a very neat and ornamental one in appearance.

There is another advantage in using our plans, which is a certainty of having no surplus material in the construction. The ordinary run of carpenters and mechanics have not the technical knowledge necessary to enable them to correctly design a structure of this kind, and, in, fact, are apt to lose sight of the great weight contained in a comparatively small volume of water, 5,000 gallons of which, for instance, weigh 40,000 pounds, or more than 20 tons, and 50,000 gallons, more than 200 tons. And to be on the safe side they generally get twenty to twenty-five per cent (sometimes fifty to seventy-five) more material in the tower than is required by the best practice, thereby unnecessarily increasing the cost that much to the purchaser. So, the cost of our plans is nearly always doubly offset by the cost of material saved where the tower is built from them.

Of course, in purchasing the complete tower of us, the customer is assured of getting the best material throughout, and material that is thoroughly finished, all ready to go together, which naturally relieves him of all trouble and worry in this connection, a consideration of no little importance.

We will also furnish the iron work only of these towers where desired, letting the customer supply his own timbers or wood work. Where we do this we will make no charge for the plans and bills of material.

USEFUL INFORMATION—WATER

Doubling the diameter of a pipe increases its capacity four times. Friction of liquids in pipes increases as the square of the velocity.

The mean pressure of the atmosphere is usually estimated at 14.7 lbs. per square inch, so that with a perfect vacuum it will sustain a column of mercury 29.9 inches or a column of water 33.9 feet high.

To find the pressure in pounds per square inch of a column of water, multiply the height of the column in feet by .434. Approximately, we say that every foot elevation is equal to ½ lb. pressure per square inch; this allows for ordinary friction.

To find the diameter of a pump cylinder to move a given quantity of water per minute (100 feet of piston being the standard of speed), divide the number of gallons by 4, then extract the square root, and the product will be the diameter in inches of the pump cylinder.

To find quantity of water elevated in one minute running at 100 feet of piston speed per minute, square the diameter of the water cylinder in inches and multiply by 4. Example: Capacity of a 5-inch cylinder is desired. The square of the diameter (5 inches) is 25, which, multiplied by 4, gives 100, the number of gallons per minute (approximately).

To find the horse power necessary to elevate water to a given height, multiply the total weight of the water in pounds by the height in feet, and divide the product by 33,000 (an allowance of 25 per cent. should be added for water friction, and a further allowance of 25 per cent. for loss in steam cylinder).

The area of the Steam Piston, multiplied by the steam pressure, gives the total amount of pressure that can be exerted. *The area of the Water Piston*, multiplied by the pressure of water per square inch, gives the resistance. *A margin* must be made between the *power* and *resistance* to *move* the pistons at the required speed—say from 20 to 40 per cent. according to speed and other conditions.

To find the capacity of a cylinder in gallons. Multiplying the area in inches by the length of stroke in inches will give the total number of cubic inches; divide this amount by 231 (which is the cubical contents of a U. S. gallon in inches), and product is the capacity in gallons.

To find the number of gallons in a Tank, multiply the inside bottom diameter in inches by the inside top diameter in inches, then this product by 34; point off four figures and the result will be the average number of gallons to one inch in depth of the Tank.

The following table is arranged to show at a glance the equivalent pressure due to columns of water from 10 to 400 feet in height. Also more particularly to show the number of gallons of water delivered, and the height to which it will be projected through nozzles from one-quarter inch to two inches diameter.

Height of column in feet.	Corresponding pressure in lbs. per square inch.	DIAMETER OF NOZZLE IN INCHES.																	
		¼		½		⅝		¾		1		1¼		1½		1¾		2	
		Height of Jet in feet.	Gallons discharged per minute.	Height of Jet in feet.	Gallons discharged per minute.	Height of Jet in feet.	Gallons discharged per minute.	Height of Jet in feet.	Gallons discharged per minute.	Height of Jet in feet.	Gallons discharged per minute.	Height of Jet in feet.	Gallons discharged per minute.	Height of Jet in feet.	Gallons discharged per minute.	Height of Jet in feet.	Gallons discharged per minute.	Height of Jet in feet.	Gallons discharged per minute.
10	4 3	9.37	3.6	9.7	14.5	9.7	22.7	9.8	32 8	9.8	58.2	9.9	91.	9.9	130.8	9.9	177.6	9.9	232.8
20	8.6	17.5	5.1	18.7	20.6	19.	32.2	19.2	46.2	19.4	82.3	19.5	128.4	19.6	184.8	19.6	252.	19.7	328.8
30	13.0	24.4	6.4	27.2	25.2	27.7	39.4	28.3	56.8	28.6	100.9	29.	157.2	29.1	226.8	29.2	309.6	29.3	403.2
40	17.3	30.0	7.3	35.0	29 5	36.	45.5	37.	65.5	37.5	116.5	38.	182.4	38.3	261.6	38.6	356.4	38.7	465.6
50	21.6	34.0	8.1	42.2	32.5	44.	50.9	45.	73.3	46.1	130.8	47.	204.	47.4	292.8	48.	408.	48.	520.8
60	26.	37.5	8.9	48.7	35.6	51.	55.7	52.	80.3	54.4	142.8	55.	223.2	56.2	320.4	57.	436.8	57.	571.2
70	30.3	39.	9.6	55.	38.5	58.	60.1	60.	86.8	62.4	154.8	64.	241.2	65.	346.8	66.	471.6	66.	616.8
80	34.6	40.	10.3	60.	41 2	64.	64.3	67.	92.6	70.	164.4	72.	258.	73.	370.8	74.	505.2	75.	658.8
90	39.	39.4	10.9	65.	43.7	70.	68.3	73.	98.4	77.	174.0	80.	272.4	82.	393.6	83.	535.2	84.	711.6
100	43.3	37.5	11.5	69.	46.1	75.	72.0	79.	103.7	84.	183.6	87.	288.	90.	415.2	91.	565.2	92.	738.
120	52.	.....	.....	75.	50.4	84.	78.8	90.	113.5	97.	201.6	102.	315.6	105.	453.6	107.	626.4	109.	807.6
140	60.6	.....	.....	79.	54.5	91.	85.2	99.	122.4	109.	217.2	116.	340.8	120.	490.8	123.	668.4	125.	872.4
160	69.3	.....	.....	80.	58.1	96.	90.8	106.	131.2	120.	232.9	128.	361.	133.	524.2	137.	713.5	140.	931.9
180	78.	.....	.....	78.75	61.6	99.	96.5	112.	139.1	129.	247.1	139.	373.2	141.	556.1	151.	756.9	155.	988.6
200	86.6	.....	.....	75.	65.2	100.	101.8	116.	146.4	137.	260.4	150.	406.8	158.	588.	166.	798.	169.	1043.
220	95.1	.....	.....	.....	.....	99.	106.7	119.	153.7	145.	273.3	159.	427.1	165.	615.	177.	837.1	182.	1087.6
240	104.	.....	.....	.....	.....	96.	111.5	120.	160.6	150.	285.5	168.	446.1	180.	642.4	189.	874.3	195.	1142.
260	112.6	.....	.....	.....	.....	92.	116.0	119.2	167.1	155.	297.1	175.	464.2	190.	668.5	200.	909.9	208.	1188.4
280	121.2	.....	.....	.....	.....	84.	120.4	116.7	173.4	158.	308.3	182.	481.8	198.	693.8	210.	944.3	219.	1233.4
300	130.	.....	.....	.....	.....	75.	124.8	112.5	178 8	160.	319.2	187.	498.	206.	717.6	220.	979.2	230.	1276.8
350	151.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	198.	538.5	222.	775.5	241.	1055.5	255.	1378.7
400	173.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200.	576.	233.	829.4	257.	1128.9	275.	1474.5

The pressure of head water is taken at the nozzle, no allowance being made for friction in the pipe. In practical calculations to determine the height to which water can be thrown, the head consumed by the friction of the water in flowing from the pump to the nozzle must be considered.

A FEW OF THOSE USING OUR TOWERS

Showing Particularly the Scope of Country Covered.

ALABAMA.

Jefferson Co. Cotton Oil Co., Birmingham, 51 foot tower and 10,000 gallon tank.
Montgomery Cotton Mills, Montgomery, 27 foot tower and 5,000 gallon tank.

ARKANSAS.

Arkansas Cotton Oil Co., Helena, 63 foot tower and 30,000 gallon tank.

CANADA.

A. Westland, Wyoming, Ontario, 75 foot tower and 20,000 gallon tank.

CONNECTICUT.

Williamsville Manufacturing Co., Dayville, 75 foot tower and 30,000 gallon tank.
The Bigelow Co., New Haven, 63 foot tower for 30,000 gallon tank.

DELAWARE.

John Bancroft & Sons, Wilmington, 27 foot tower and 2,000 gallon tank.

DISTRICT OF COLUMBIA.

Grange Camp Association, Washington, 27 foot tower and 30,000 gallon tank.

FLORIDA.

Palmetto Phosphate Co., Bartow, 87 foot tower and 10,000 gallon tank.
Plant Investment Co., Clearwater Harbor, 75 foot tower and 50,000 gallon tank.
John B. Stetson, De Land, 51 and 63 foot towers and two 10,000 gallon tanks.

GEORGIA.

Georgia Cotton Oil Co., Atlanta, 80 foot tower and 30,000 gallon steel tank.
Macon Street Railway, Macon, 39 foot tower and 10,000 gallon tank.
Savannah Guano Co., Savannah, 87 foot tower and 10,000 gallon tank.

ILLINOIS.

David Bradley Mfg. Co., Bradley, 63 foot tower and 20,000 gallon tank.
Plano Mfg. Co., West Pullman, 75 foot tower and 20,000 gallon tank.

INDIANA.

Kingan & Company, Indianapolis, 75 foot tower and 33,000 gallon tank.
Pioneer Hat Co., Wabash, 75 foot tower and 15,000 gallon tank.
Evansville Ice and Storage Co., Evansville, 87 foot tower and 15,000 gallon tank.

INDIAN TERRITORY.

Purcell Mill & Elevator Co., Purcell, 51 foot tower and 5,000 gallon tank.
Purcell Cotton Seed Oil Mills, Purcell, 63 foot tower and 10,000 gallon tank.

IOWA.

Lourie Implement Co., Keokuk, 51 and 63 foot towers and two 30,000 gallon tanks.
David Clarkson, Alta, 27 foot tower and 10,000 gallon tank.
County Asylum, Clarence, 39 foot tower and 10,000 gallon tank.

KANSAS.

St. John's School, Salina, 27 foot tower and 5,000 gallon tank.

KENTUCKY.

Kentucky Lumber Co., Williamsport, 27 foot tower and 10,000 gallon tank.
Henderson Cotton Mills, Henderson, 63 foot tower and 20,000 gallon tank.
Henry Watterson, Louisville, 63 foot tower and 6,000 gallon tank.

LOUISIANA.

Minden Compress Co., Minden, 27 foot tower and 30,000 gallon tank.
Union Oil Mills, Shreveport, 80 foot tower and 25,000 gallon steel tank.
New Orleans & Western Railroad Co., N. O., 63 foot tower and 30,000 gallon tank.

MARYLAND.

Cumberland Glass Co., Cumberland, 63 foot tower and two 10,000 gallon tanks.
Baltimore Car Wheel Works, Baltimore, 75 foot tower and 30,000 gallon tank.

MASSACHUSETTS.

Draper Brothers Co., Canton, 51 foot tower and 10,000 gallon tank.
Kerr Thread Co., Fall River, 27 foot tower and 15,000 gallon tank.
Slater Woolen Mills, Wilkinsville, 27 foot tower and 20,000 gallon tank.

MAINE.

John Carroll, Gorham, 39 foot tower and 2,000 gallon tank.

MISSOURI.

Mound Coffin Co, St. Louis, 87 foot tower and 10,000 gallon tank.
Belleville Gas Light & Coke Co., Belleville, 27 foot tower and 5,000 gallon tank.

MISSISSIPPI.

Planters' Cotton Seed & Crushing Assn., Greenville, 63 foot tower and 20,000 gal. tank
Mississippi Cotton Oil Co., Columbus, 63 foot tower and 30,000 gallon steel tank.

MICHIGAN.

City of Sand Beach, 51 foot tower and 30,000 gallon tank.

MINNESOTA.

Minneapolis Furniture Co., Minneapolis, 75 foot tower and 12,000 gallon tank.

NEBRASKA.

U. S. Water Supply Co., Omaha, 51 foot tower and 30,000 gallon tank.
City of Rushville, 39 foot tower and 40,000 gallon tank.

NEW HAMPSHIRE.

J. A. Holt, East Candia, 39 foot tower and 5,000 gallon tank.
W. T. Barker & Co., Bennington, 63 foot tower and 10,000 gallon tank.

NEW JERSEY.

Continental Match Co., Passaic, 63 foot tower and 15,000 gallon tank.
Walter Scott & Co., Plainfield, 63 foot tower and 30,000 gallon tank.
U. S. Naval Station, Dover, 51 foot tower and 10,000 gallon tank.

NEW YORK.

American Cotton Oil Co., N. Y., 12-63 and 80 foot towers and 30,000 gallon steel tanks.
Eastman Kodak Co., Rochester, 63 foot tower and 30,000 gallon tank.
American Wringer Co., Auburn, 63 foot tower and 15,000 gallon tank.
N. Y. Sanitary Utilization Co., Barren Island, N. Y. City, 63 foot tower and 40,000 gallon tank.

NEVADA.

Nevada Hospital for Mental Diseases, Reno, 75 foot tower and 15,000 gallon steel tank.

NORTH CAROLINA.

Cleveland Cotton Mills, Shelby, 39 foot tower and 10,000 gallon tank.
Navassa Guano Co., Wilmington, 75 foot tower and 30,000 gallon tank.

OHIO.

Diamond Match Co., Barberton, two 27 foot and one 63 foot towers and 10,000 gallon tanks.
Dalzell, Gilmore & Leighton Co., Findlay, 51 foot tower and 15,000 gallon tank.
Cincinnati Barbed Wire Fence Co., Cincinnati, 87 foot tower and 20,000 gallon tank.

OKLAHOMA TERRITORY.

Jennison Mac. Co., Oklahoma City, 27 foot tower and 5,000 gallon tank.

PENNSYLVANIA.

Consolidated Lamp & Glass Co., Coraopolis, 75 foot tower and 20,000 gallon tank.
United States Glass Co., Pittsburg, 51 foot tower and 10,000 gallon tank.
Slaymaker-Barry Co., Connellsville, 51 foot tower and 30,000 gallon tank.

RHODE ISLAND.

A. L. Sayles & Son, Pascoag, two 51 foot towers and 10,000 gallon tanks.
Providence & Narragansett Mills, Providence, 63 foot tower and 10,000 gallon tank.

SOUTH CAROLINA.

Greenwood Oil Co., Greenwood, 39 foot tower and 6,000 gallon tank.
Charleston City Railway Co., Charleston, 39, 27 and 20 foot towers and 30,000 and 10,000 gallon tanks.

TENNESSEE.

Park Woolen Mills, Chattanooga, 39 foot tower and 10,000 gallon tank.
Joy & Sons, Florists, Nashville, 39 foot tower and 5,000 gallon tank.
Memphis Car & Foundry Co., Memphis, 63 foot tower and 20,000 gallon tank.

TEXAS.

Mineola Compress Co., Mineola, 51 foot tower and 20,000 gallon tank.
National Cotton Oil Co., Denison, 80 foot tower and 30,000 gallon steel tank.

VIRGINIA.

Soldiers' Home, Richmond, 63 foot tower and 20,000 gallon tank.
Maj. Lewis Ginter, Richmond, 27, 39, 51 and 63 foot towers and 10,000 to 40,000 gallon tanks.
Jno. A. Cannon, Manassas, 39 foot tower and 6,000 gallon tank.

WEST VIRGINIA.

R. L. Coleman, Somerset, 27 foot tower and 3,000 gallon tank.
O. H. Michaelson, Charleston, 15 foot tower and 15,000 gallon tank.

VERMONT.

Stewart Hartshorn Co. Burlington, 39 foot tower and 5,000 gallon tank.

WISCONSIN.

Hamilton Mfg. Co., Two Rivers, 51 foot tower and 5,000 gallon tank.
Mitchell & Lewis Wagon Works, Racine, 63 foot tower and 15,000 gallon tank.

RESERVOIR TANKS

For Railroads, Water Works, Mills,
Factories. Hotels and Farm Use.

TUBS, TANKS, VATS AND STUFFING WHEELS

FOR TANNERIES.

GENERATORS, MASH TUBS AND FERMENTERS

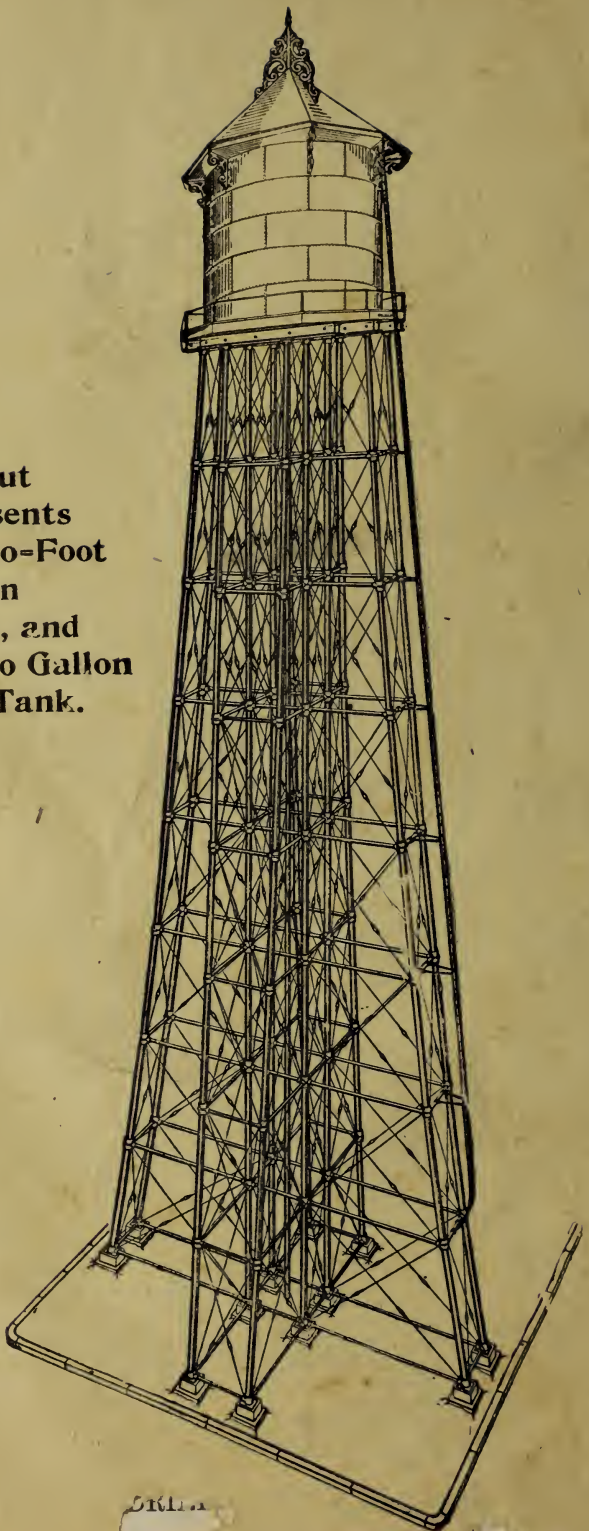
For Cider and Vinegar Manufacturers.

TANKS for Gold, Silver, Copper and Coal Mines.
for the CYANIDE PROCESS a Specialty.

Tubs, Tanks and Kettles for Paper Mills

FERMENTERS, MASH TUBS,
GENERATORS, RECTIFIERS,
RECEIVERS, WHISKY TUBS,
SLOP TUBS, AND YEAST TUBS

For Distilleries and Breweries.

WE USE ONLY KILN-DRIED LUMBER FOR SPIRIT TUBS.

This Cut Represents Our 100-Foot All Iron Tower, and 100,000 Gallon Steel Tank.